

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of

Review of the Commission's Rules
Regarding the Pricing of Unbundled
Network Elements and the Resale of Service
by Incumbent Local Exchange Carriers

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WC Docket No. 03-173

REPLY COMMENTS OF BELL SOUTH

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BellSouth Corporation, on behalf of itself and its wholly owned subsidiaries, ("BellSouth") hereby submits its Reply Comments in response to the comments filed on the *Notice of Proposed Rulemaking ("Notice")* in the above referenced proceeding.¹

I. INTRODUCTION AND SUMMARY

In their opening comments, the competitive local exchange carriers ("CLECs") attempted to frame the issue in this proceeding as embedded, short-run costs versus forward-looking, long-run costs. Confident that incumbent local exchange carriers ("ILECs") would insist that the Commission must permit them to recover their historical costs in the prices of unbundled network elements ("UNEs"), the CLECs mounted a frontal assault on embedded costs and set the stage for a battle of competing principles. The clash did not occur. Neither BellSouth nor any other ILEC advocated the use of embedded costs. To the contrary, BellSouth embraces the use of a forward-looking cost methodology. The issue before the Commission here is not whether

¹ *In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173, *Notice of Proposed Rulemaking*, FCC 03-224 (rel. Sept. 15, 2003).

the Commission should abandon a forward-looking cost methodology but whether and how should such a methodology be reformed.

In its comments, BellSouth demonstrated that the time has come for the Commission to adjust the current forward-looking cost methodology so that it would facilitate achieving all of the goals of the Telecommunications Act of 1996. As BellSouth showed, a forward-looking methodology, reflective of real-world attributes, would help achieve the objectives of the Act. In other words, such a costing methodology would provide cost-based prices for UNEs that accurately reflect the ILEC's cost of providing UNEs. Such a methodology would create a foundation that supports competition by creating pricing signals that will promote rational economic decisions on the part of all industry participants until a more market-based pricing environment is achieved. Furthermore, UNE prices that properly compensate the incumbent would provide the correct market signals to a CLEC to make a determination as to whether it should enter the market through leasing UNEs, self-provisioning, resale or some combination of all of the alternatives.

The CLECs champion the pricing status quo. In attempts to forestall any change to the forward-looking cost methodology that would incorporate real-world attributes as the Commission has suggested, the CLECs equate the terms "real-world" and "actual" as synonyms for embedded and, therefore, argue that such concepts should be eschewed. As BellSouth explained in its initial comments and further explains in this Reply, the introduction of real-world attributes and the use of actual data do not violate forward-looking cost principles.

Nowhere in this proceeding has BellSouth, or any ILEC for that matter, advocated the use of historical costs for setting UNE prices. Nevertheless, current data can be useful in estimating forward-looking costs. Use of current data that is reflective of forward-looking relationships,

forward-looking deployments, forward-looking practices and forward-looking costs should not be discarded by the Commission simply because some parties mischaracterize the data as “embedded.” In this Reply, BellSouth shows that the use of current data would improve the forward-looking cost methodology. Use of these data result in a methodology that better reflects the cost that an ILEC will incur on a going forward basis.

Ultimately, it is the result of the forward-looking methodology which is most contested. CLECs are almost unabashed in their desire to retain a purely hypothetical approach to calculating forward-looking costs. The reason for their adherence to modeling a fictitious network is the extraordinarily low UNE rates that flow from such a process. If extraordinarily low UNE rates were the statutory requirement, then the CLEC arguments might have some foundation; but that result is neither the requirement nor the objective of the statute. Instead, the statute states the ILECs should be compensated for the UNEs that they provide and that such compensation should be based on the cost of providing the UNE including a reasonable profit.² Reforming the forward-looking cost methodology to reflect real-world attributes is the way in which the statute’s objective of compensating the ILEC can be achieved.

The objections of the CLECs to using real-world attributes cannot withstand scrutiny. One tactic CLECs employ is to obfuscate the debate. For example, AT&T attempts to frame the economic principles underlying the TELRIC standard as one based on perfectly contestable markets not perfectly competitive markets. The NERA Reply Declaration attached hereto questions the injection of an artificial and irrelevant “contestability vs. competition” debate into

² See 47 U.S.C. § 252(d)(1).

the issue of reforming TELRIC to reflect the real-world attributes of an ILEC's network.³ As NERA shows, whether the local exchange market is contestable or more conventionally competitive has no bearing on the incorporation of actual network topography, customer locations, and network routes in the TELRIC calculation.

No more convincing are claims that using real-world attributes somehow transforms TELRIC into a short-run methodology. Using realistic network data does not produce short-run costs or otherwise diminish the TELRIC methodology. To the contrary, the use of more realistic data would promote economic efficiency by matching UNE prices more closely to the ILECs' forward-looking costs.

In this Reply, BellSouth shows that long-run incremental costs of providing network elements must be estimated in view of the real world constraints that are faced by the ILECs. For example, BellSouth explains how its loop model, which many commenters compliment because of its use of geocoded customer locations and minimum spanning road tree algorithm, could be improved by including other real-world attributes such as actual remote terminal locations. Likewise, BellSouth shows that the Commission should modify the basis upon which new technology deployment is reflected in a TELRIC study. BellSouth demonstrates that for technology selection, TELRIC should incorporate the incumbents' current network deployment plans and guidelines.

As this Reply demonstrates, a sensible approach to TELRIC is one that recognizes the asymmetrical obligations of ILECs and CLECs. ILECs, such as BellSouth, must bear the responsibility of having to serve whenever or wherever service within its service area is

³ Attachment 1, Reply Declaration of NERA Economic Consulting On Behalf of BellSouth Telecommunications, Inc., January 30, 2004 ("NERA Reply Declaration").

demanded. CLECs and intermodal competitors bear no similar obligation. BellSouth's competitors are free to choose which customers they will or will not serve. Because of the special circumstances of the ILEC, no single efficiency benchmark can possibly apply to both the ILEC and the CLEC. Common sense dictates that the ILEC with its carrier-of-last resort ("COLR") obligations cannot avoid the cost of maintaining ubiquity and the ability to provide timely service regardless of customer location and this constraint should be accounted for in the TELRIC methodology.

BellSouth supports the standard of a long run, forward-looking cost. A forward-looking cost methodology, however, should not be an exercise of the imagination. As this Reply demonstrates, incorporation of realistic attributes will improve the TELRIC methodology and produce costs that ILECs are likely to incur in the provision of UNEs. Not only is this result fair and reasonable, but also it is what that statute requires.

II. DISCUSSION OF ISSUES CONCERNING A FORWARD-LOOKING COST METHOD

BellSouth supports the use of a forward-looking cost methodology. In its comments it submitted a list of guiding principles that should constitute the foundation for a properly conducted Total Element Long Run Incremental Cost ("TELRIC") study: one that adheres to economic principles; one that produces cost-based rates that adequately compensate the incumbent provider for costs incurred in provisioning unbundled network elements ("UNEs"); and one that sends the correct investment signals to both incumbents and competitors. While the comments, to varying degrees, reflect conceptual agreement with the principles set forth by BellSouth, some recommendations made by commenters would readily sacrifice adherence to the principles in order to achieve a result-based outcome that is, lower UNE prices. BellSouth addresses these issues below.

Before responding to specific issues, certain clarifying remarks are in order. A fundamental conceptual underpinning has been lost in the economic rhetoric that has been bandied about in this proceeding. Two separate and distinct economic issues, cost and price, have been blurred and, to some extent, merged.⁴ The Commission's cost methodology, used to calculate the directly attributable costs associated with providing an unbundled element, adheres to long-established economic principles – *i.e.*, long-run, incremental cost methodology. The foundation of the pricing methodology, however, rests on a pricing formula based solely on an allocation of two types of costs, *i.e.*, shared and common costs applied to these direct costs. This formula approach to pricing does not properly consider price as a distinct concept. Indeed, many economists have criticized pricing schemes that simply allocate shared, joint and common costs as arbitrary and unlikely to lead to economically efficient prices.⁵ Efficient pricing principles

⁴ Solveig Singleton of the Competitive Enterprise Institute identifies the conundrum that has arisen in the theoretical nature of the arguments fostered by what MCI refers to as the 'stable of economists': "Academic economists of the twentieth century enjoyed themselves developing models of perfect competition, in which all the actors enjoyed perfect competition or some such thing, and duly noted that in their models, prices headed downward to costs. These models were and are helpful in explaining certain trends in real markets. But they were never intended to supply a standard of what real prices 'should' be in the real world although they have been misused for that purpose ever since." Competitive Enterprise Institute Comments at 4.

⁵ See, *e.g.*, William J. Baumol, *Superfairness: Applications and Theory* 134-136 (MIT Press 1988); James C. Bonbright, *et al.*, *Principles of Public Utility Rates* 481 (Public Utility Reports 2d ed. 1988); Paul J. Garfield & Wallace F. Lovejoy, *Public Utility Economics* 140-41 (Prentice-Hall 1964); Alfred E. Kahn, *Letting Go: Deregulating the Process of Deregulation* 70-73 (Institute of Public Utilities and Network Industries, Michigan State University, 1998); Dudley F. Pegrum, *Public Regulation of Business* 194-98 (Richard D. Irwin, Inc. 1965); John T. Wenders, *The Economics of Telecommunications: Theory and Policy* 174 (Ballinger 1987); William J. Baumol *et al.*, *How Arbitrary is 'Arbitrary'? or, Toward the Deserved Demise of Full Cost Allocation*, *Pub. Util. Fort.*, Sept. 3, 1987, at 16; Ronald Braeutigam, *An Analysis of Fully Distributed Cost Pricing in Regulated Industries*, 11 *Bell J. Econ.* 182 (1980); Ronald H. Coase, *The Theory of Public Utility Pricing and Its Application*, 1 *Bell J. Econ.* 113 (1970); Alfred E. Kahn, *Deregulation: Looking Backward and Looking Forward*, 7 *Yale J. on Reg.* 150 (1990); David L. Kaserman & John W. Mayo, *Cross-Subsidies in Telecommunications: Roadblocks on the Road to More Intelligent Telephone Pricing*, 11 *Yale J. on Reg.* 127 (1994); Alexander C. Larson, *Cost Allocations, Predation, and Cross-Subsidies in Telecommunications*, 14 *Iowa J. Corp. L.* 377 (1989); George Sweeney, *Welfare Implications of Fully Distributed Cost Pricing* Footnote Continued

require both cost and market information.⁶ The existing Commission pricing rules reflect only cost information to the exclusion of market information. Thus, any amendment of the pricing rules should permit market information to be considered in the setting of prices.

The Commission should note that the fundamental aspects of TELRIC – forward-looking, long-run, incremental costs of an efficient carrier – are correct for the development of economic costs, but not for setting prices. BellSouth has never disputed the appropriateness of a forward-looking method for cost development, but contends that eventually market conditions should determine rates, not regulation. Putting the quibbling about terminology and economic theory aside, the real issue confronted by the Commission can be simplified: what inputs and

Applied to Partially Regulated Firms, 13 Bell J. Econ. 525 (1982); Haskell P. Wald, *The Theory of Marginal Cost Pricing and Utility Rates*, Pub. Util. Fort., June 22, 1967, at 15.

⁶ Three economic pricing standards are relevant for establishing an appropriate pricing methodology. First, the price of a service should be no greater than its stand-alone cost. See Gerald R. Faulhaber, *Cross-Subsidization: Pricing in Public Enterprises*, 65 Am. Econ. Rev. 966, 974-76 (1975). The FCC has recognized this principle in its rules governing UNEs, noting that “[t]he sum of a reasonable allocation of forward-looking common costs and the total element long-run incremental cost of an element shall not exceed the stand-alone costs associated with the element.” 47 C.F.R. § 51.505(c)(2).

Second, the price for joint and common costs should be efficient. Establishing the efficiency of joint and common costs is rather difficult. Pricing at marginal cost for all services leaves the shared and common costs of the firm unrecovered. Such pricing is unsustainable, causing firms to exit, and is therefore not efficient in a dynamic sense. Prices can diverge from marginal costs in second-best fashion via multipart tariffs or Ramsey-efficient pricing. See, e.g., Alfred E. Kahn & William B. Shew, *Current Issues in Telecommunications Regulation: Pricing*, 4 Yale J. on Reg. 191, 248 n.142 (1987); Jean-Jacques Laffont & Jean Tirole, *Competition in Telecommunications* 61-83, 114-16, 131-36 (MIT Press 2000); Charles H. Kennedy, *An Introduction to U.S. Telecommunications Law* 146-47 (Artech House, Inc. 1994); Bonbright *et al.*, *supra* note 3, at 426; William J. Baumol & David F. Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 Am. Econ. Rev. 265 (1970).

Third, a proper relationship between retail and wholesale prices should be established. One standard, albeit controversial, is the efficient components pricing rule (“ECPR”). The FCC has rejected this particular approach. See *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Docket Nos. 96-98 & 95-185, *First Report and Order*, 11 FCC Rcd 15499, 15859, ¶ 709 (1996) (“*First Report and Order*”) (“We conclude that ECPR is an improper method for setting prices of interconnection and unbundled network elements because the existing retail prices that would be used to compute incremental opportunity costs under ECPR are not cost-based.”).

assumptions constitute forward-looking, long-run and efficient costs such that the incumbents will be adequately compensated and competitors will not be harmed.⁷ The challenge is to transform the economic theory into a real-world application. As discussed by BellSouth in its initial comments, the incumbents are tethered by existing technologies deployed throughout their integrated networks and are restricted by COLR obligations. These factors must be considered rather than merely assumed away in developing realistic forward-looking, long-run, incremental inputs that reflect attainable efficiency considerations.

Moreover, contrary to the claims of some parties, BellSouth does not support the use of embedded data or reflection of obsolete technologies in the development of economic costs. As incorrect as these parties are in their protestations that BellSouth supports an embedded methodology, equally incorrect are their attempts to characterize the use of current data as reflective of embedded costs. Current data that are reflective of forward-looking relationships, forward-looking deployments, forward-looking practices, and forward-looking costs should not be labeled “embedded,” as several parties do, solely because the information is current. Nor should these data be unceremoniously discarded under a subjective, and often unattainable,

⁷ Throughout the comments of the CLECs, there is considerable discussion regarding certain inputs to the TELRIC studies. For example, fill factors, structure sharing, switch discounts, cost of money and depreciation are discussed and debated at length. However, there are many other costs inputs required for TELRIC studies that have gone unmentioned, but which also play a critical role in the development of accurate TELRIC results. These include such inputs as labor rates, material prices for facilities and equipment; exempt material loadings; engineering, placement and splicing costs; outside contractor costs, etc. If the Commission’s goal is to repair TELRIC such that the results are more reflective of actual network characteristics, it should clearly state that ILEC-specific data provides the most appropriate source of input. BellSouth does not believe the Commission should establish a nationwide set of input values as it did in the Tenth Report and Order for Universal Service studies. Clearly, a national average set of inputs, by definition, does not represent the true costs of any carrier. Instead, the Commission should make clear that an ILEC’s actual cost (material, engineering, placing, etc.) of currently available forward-looking technologies represents the best estimate of those costs for a forward-looking TELRIC study.

“efficiency” benchmark. At this point, BellSouth looks to the Commission to apply some common sense with respect to the cost study inputs and assumptions, to the economic theory and to the cost methodology in order to better reflect the costs that the incumbents will actually incur on a going-forward basis. In the end, the Commission must have a methodology that adequately compensates the ILEC for its costs and establishes prices that achieve all the goals of the Communications Act.⁸

The common sense approach BellSouth seeks would prevent after-the-fact adjustments to TELRIC results in order to achieve an idealized price for the purpose of promoting (inefficient) competition. Likewise, there is a need to dispel the presumption that each successive cost proceeding must result in decreasing costs. Not all costs are decreasing. For example, labor rates, which reflect contractual obligations, benefit adjustments, and cost of living trends generally are increasing. Thus, the cost development process should be independent of preconceived notions of what the outcome should be.

⁸ The Act provides that UNEs should be priced at cost plus a reasonable profit. In establishing such a pricing standard, Congress recognized a rigid formula approach could undermine the pro-competitive goals of the Act, which include incenting investment and innovation.

A. Impact of *Triennial Review Order* (§§ 42-45)

Commenters have seized upon the Commission's inquiry regarding the impact of the *Triennial Review Order* ("TRO") as an opportunity to advocate cost allocation approaches which would result in lower UNE loop costs. They are unabashed in their recommendations that would allocate away loop costs. These comments, however, overlook several key points in terms of BellSouth's network architecture and cost development, which make the request for Commission-specified allocation rules unnecessary.

BellSouth is a telecommunications company whose primary service is basic local exchange service. Thus, the provisioning of voice grade service is the cost causer of BellSouth's basic, or fundamental, network. Broadband services, including DSL, are incremental services to that fundamental network.⁹ An important theme in this proceeding is this Commission's recognition that the cost method should produce a more realistic reflection of the actual characteristics of the incumbents' networks. The most appropriate way to account for that in a cost study is to recognize, that in today's environment, BellSouth's fundamental network is narrowband with DS3 and higher loops being provisioned on an overlay network. Indeed, even under the current interpretation of TELRIC, this approach reflects the most efficient telecommunications technology currently available. Thus, the current studies designed to determine the cost of a basic narrowband network exclude the incremental costs associated with broadband facilities and related expenses, and any proposal to allocate away the narrowband costs that will continue to exist makes absolutely no sense.

⁹ BellSouth recognizes that the FCC, in its broadband proceedings, has defined broadband services as any services involving data transmission rates of 200kbps or higher. For clarity, BellSouth, for purposes of the instant Reply Comments, defines narrowband services as DS-1 and below, excluding packetized data services, *e.g.*, DSL.

Also, commenters' focus on the *Triennial Review Order's* changes to the availability of high capacity loops as a reason for the Commission to engage in cost allocation misses an essential fact. BellSouth deploys high-capacity loops (DS3 and higher) over a separate overlay network; a network - that does not "intersect" the narrowband network as significantly as apparently some commenters believe.¹⁰ Furthermore, the costs the incumbents incur to provide voice capabilities over the loop (whether that loop is all-cooper or a hybrid cooper-fiber loop) do not change just because the CLECs are unable to provide broadband services.

In addition, in order to capture real-world attributes in the TELRIC studies as the Commission desires, the cost studies should reflect actual demand. Indeed, AT&T's expert appears to support this position, noting that the Commission has already determined that fill factors should be based on current, rather than ultimate or future demand.¹¹ Accordingly, to maintain a consistent approach in the cost study, only current demand should be considered throughout the entire cost process.

Furthermore, use of demand (especially if an attempt is made to use a projection of demand¹²) without inclusion of the customer locations (an approach that would be unsupportable

¹⁰ Declaration of Joseph P. Riolo, submitted with AT&T Comments, at 59-63, ¶¶ 111-19 ("Riolo Declaration").

¹¹ *Id.* at 6, ¶14.

¹² AT&T wants the Commission to require that incumbents provide "line counts of all loops they serve, by *loop type and by wire center*, to CLECs in any UNE rate proceeding before a State commission Such data should be produced not only for the current time period but also for a reasonable historical period, along with any forecasts of demand for these services." *Id.* at 72, ¶ 132) On the one hand CLECs, including AT&T, fight so hard against the use of historical data, but in this instance, AT&T now wants it. More importantly, this demand is not only unnecessary, but is also unreasonable. Indeed, such a request directed more toward obtaining competitive data. Furthermore, it is virtually impossible to accurately determine where forecasted demand will occur and which services a specific customer will order. An allocation methodology would necessarily assume the demand occurs at the same or some arbitrary location. This is extremely unrealistic. As BellSouth witness James Stegeman discussed in *In the Matter of General Proceeding to Determine Permanent Pricing for Unbundled Network* Footnote Continued

and arbitrary for forecasted demand) and associated investments makes no sense and severely understates the costs the incumbents incur.

Elements, North Carolina Utilities Commission Docket No. P-100, sub 133d (“*NC UNE Proceeding*”): “not only has there been a significant increase in the number of households served by BellSouth, but there also has been a significant increase in the dispersion of the BellSouth customer base. Both of these facts would lead to the need for additional facilities.” (Testimony of James W. Stegeman, Nov. 8, 2002, at 8, lines 6-8) Indeed, inclusion of additional demand information does not necessarily lead to lower “per unit” costs. Testifying in North Carolina, Mr. Stegeman compared BSTLM runs using 1998 and 2000 customer demand data and “found that while the service count grew by 4.9%, the network route mileage grew by 4.2% for copper and 6.0% for fiber, and the total material investment grew by 11.3%. However, the material investment of a 2-wire voice grade loop (element A.1.1) did not change materially. (Page 14, lines 12-15) Mr. Stegeman’s findings highlight the dangers of applying allocation factors where there is no direct relationship between a change in demand and unit investments.

B. Network Assumptions—General Theory (§§ 49-61)

The *Notice* requested comments on the appropriate characteristics of a forward-looking cost methodology. One of the questions put forth by the Commission was whether it should retain a long-run methodology or change to a methodology based on short-run costs. In its comments, BellSouth advocated that the Commission retain a long-run focus, one in which, all costs are considered variable.

The long-run concept, which BellSouth enumerated as its first principle for reforming TELRIC,¹³ was generally embraced by the commenters.¹⁴ For the most part, commenters eschewed a short-run approach, finding that such an approach would not accurately reflect the market entry/exit decision-making process.¹⁵ Despite the consensus regarding the retention of a long-run orientation, there is a division of thought with respect to the Commission's tentative conclusion that the long-run approach should be firmly rooted in real-world attributes of existing networks. Generally, companies that have taken advantage of artificially low UNE rates oppose the introduction of real-world network attributes into the TELRIC methodology.

¹³ See BellSouth Comments, Exhibit 1.

¹⁴ For example Covad stated that it supported "existing TELRIC rules that require cost models to be developed according to a long-run planning horizon." Covad Comments at 7.

¹⁵ For example, the Declaration of Michael Pelcovits ("Pelcovits Declaration") submitted with to MCI's Comments, states that "expenditures that an ILEC makes over the short term are not reliable indicators of the value of their network." Pelcovits Declaration at 30. Ben Johnson Associates, Inc. in its *Analysis of Selected Issues Set Forth in the Notice of Proposed Rulemaking Regarding the FCC's Existing UNE Pricing Methodology* ("BJA Analysis") submitted with the Comments of the Association for Local Telecommunications Services ("ALTS") points out that "a long run approach helps avoid setting element prices so low that little or no incentive exists for the installation of new facilities by new entrants, while at the same time ensuring that CLECs (and their retail customers) are not burdened with excessive costs and inefficiencies." BJA Analysis at 23.

Some commenters argue that the use of real-world network attributes would be tantamount to adopting a short-run cost approach and, if such an approach is pursued, sunk costs should be excluded.¹⁶ Commenters' attempts to link real-world attributes to a short-run cost methodology are misguided. Contrary to some parties' views, adding real-world attributes to the forward-looking costs is not inconsistent with a long-run methodology. Indeed, it is the pure hypothetical underpinning of the current TELRIC methodology that is a fundamental flaw and that must be changed. As BellSouth pointed out in its comments, the current TELRIC methodology is disassociated from actual network attributes. The premise of the methodology is unrealistic: ILEC networks are not built from scratch nor is there any validity to the assumption that networks are constantly and instantaneously upgraded as technology and market conditions change.¹⁷ As pointed out by NERA, "the original TELRIC paradigm made it fundamentally

¹⁶ See, e.g., BJA Analysis at 28 ("To the extent the Commission concludes that TELRIC rules should be modified to place greater emphasis on the 'real world' attributes of the existing ILEC networks, the appropriate way to accomplish this would be to explicitly abandon the current long run costing approach and to adopt, on a consistent basis, either a medium run or short run costing approach."). The Declaration of Robert Willig ("Willig Declaration") submitted with AT&T's Comments states that the "only type of 'actual' [*i.e.*, economic] costs that are forward-looking are those that are (or will be) incurred incrementally by an efficient provider relative to some planning period of time - *i.e.*, short-run during which sunk capital costs stays constant, long-run during which all capital is allowed to vary." Willig Declaration at 30, ¶ 60.

¹⁷ Parties have attempted to defuse the incumbents' observation that TELRIC requires instantaneous replacement of all existing equipment with the most forward-looking equipment by claiming that it is really the "value" of the equipment that must be considered. Of course, they then claim that it is the cost of the most advanced forward-looking equipment that best reflects that "value." Thus, the result is the same – the costs produced under such an approach reflect the instantaneous deployment of the most advanced equipment. While BellSouth agrees with the forward-looking approach to cost development, BellSouth believes, however, that "forward-looking" inputs should reflect the realities of the environment in which those "forward-looking" technologies (or "values" of those technologies) will be deployed.

unsuited to representing the true costs of ILECs even when operating as efficiently as possible.”¹⁸

Following the current TELRIC approach BellSouth’s cost model-optimizes inputs (*e.g.*, the selection of technology) so that the resulting cost studies comport with the Commission’s “least-cost, most efficient” standard. The capital expenditures reflected in such a study reflect a long-run network configuration that cannot and never will be attained by BellSouth. Not only is the value of such a hypothetical configuration not attainable by BellSouth, it is also not attainable by any efficient provider because the hypothetical optimized design ignores any real-world constraints that are imposed on the carrier operating in the same environment as the incumbents. For example, the carrier-of-last resort (“COLR”) obligation is imposed on BellSouth and the other incumbents. While BellSouth must bear the responsibility of having to provide local service whenever or wherever such service is demanded within its service area, CLECs and intermodal competitors bear no similar obligation. BellSouth’s competitors are free to choose which customer locations and customers they will serve, as well as the terms and conditions that will apply to their provision of service. In essence, competitors can (and have) cherry-pick(ed) the most profitable customers, leaving the remainder to the incumbent that carries the COLR burden.

The asymmetrical obligations of incumbents and CLECs bear significantly on the concept of efficiency. As NERA pointed out, “[i]f efficiency remains a critically important part of the TELRIC calculation, then it would be equally important to acknowledge that no single efficiency benchmark could possibly apply both to carriers that do not have the COLR obligation

¹⁸ BellSouth Comments, Exhibit 3, Declaration of NERA Economic Consulting On Behalf of BellSouth Telecommunications, Inc., December 16, 2003, at 8, ¶ 19 (“NERA Declaration”).

and to carriers that do.”¹⁹ It is the inclusion of real-world attributes into the cost methodology that enables recognition of the constraints under which a carrier operates.

Even some of the experts of parties who continue to support a purely hypothetical cost approach concede that the purpose of a long-run study is to provide an estimate of the actual costs that the incumbent will incur. Thus, the BJA Analysis states that the “long run is a useful theoretical construct that helps explain firm behavior, and the incentives, opportunities and **constraints** that effect a firm’s behavior in **actual practice**.”²⁰ Similarly, the essay by Janusz Ordoover states that actual costs and incremental costs are not in opposition but rather are consistent when actual costs are “currently being incurred or will be incurred over some given future time period, in connection with the provision of a well-defined increment of output.”²¹ As these statements demonstrate, the long-run costs in which economists are interested are the costs that a firm will experience in providing its output. Indeed, the BJA analysis summarizes the relationship between real-world/actual attributes and long-run costs: “[t]he existing network configuration is only relevant to the extent it provides an indication of the configuration that would be optimal in a long-run planning horizon—in other words, to the extent it is the same configuration that would be chosen by a cost minimizing carrier operation in the long run.”²²

Because the incumbent selects a cost minimizing mix of technologies that reflects its real-world constraints, the long-run costs, as BJA suggests, should reflect actual network configurations. It is BellSouth’s position that the long-run planning horizon should reflect a mix

¹⁹ NERA Declaration at 10, ¶ 24.

²⁰ BJA Analysis at 23 (emphasis added).

²¹ Janusz A. Ordoover, Alternatives to TELRIC are Inferior as Bases for UNE Pricing, essay submitted with AT&T’s Comments at 8.12 (“Ordoover Essay”).

²² BJA Analysis at 37.

of technologies (not necessarily the same mix as that for the current period) constrained in part by the integrated nature of telecommunications equipment and COLR obligations. Indeed, no cost minimizing carriers, faced with these real-world constraints, would have long-run costs that only reflect the most advanced technologies.

The debate over the relationship between real-world attributes and long-run costs in this proceeding has also provided an opportunity for some commenters to continue their pursuit of unreasonably low UNE rates to the disadvantage of carriers actually investing in facilities. MCI, for example, embarks on the path that certain costs should be priced at their long-run incremental costs (“LRIC”) as those costs are defined by MCI. Specifically, MCI contends that excess switching capacity and the potential obsolescence of copper loops make these elements candidates for LRIC pricing. Under MCI’s theory, “this application of LRIC costing treats the fixed investment cost of the equipment as sunk.”²³ MCI’s result-oriented purpose here is obvious – reduce the cost and, hence, the price of UNEs to the “variable cost of maintaining and operating those assets.”²⁴ On the one hand MCI embraces the concept of long-run costs but then proceeds to trash the essential definitional characteristic of the long run – that all costs, not just selected costs, are variable. Moreover, there is no merit to MCI’s underlying assumption that there is excess switching capacity or that copper loops “ha[ve] no other use, or opportunity cost, except as scrap metal.”²⁵ Such a concept would leave incumbents with no incentives to invest in this part of its business and would further undercut any facilities-based competition.

Nevertheless, CLECs and incumbents still, and presumably will continue to, order and use

²³ Pelcovits Declaration at 46.

²⁴ *Id.* According to MCI, carrying costs associated with investment are a thing of the past and to be ignored.

²⁵ *Id.* at 48.

copper loops today. Simply, MCI's approach amounts to nothing more than the beginning of a new mythology.

Without question, the Commission's tentative conclusion to introduce real-world attributes into TELRIC has drawn much attention from commenters. BellSouth, in its comments, made clear that real-world attributes would introduce realistic parameters into the TELRIC study, which would result in a better estimate of forward-looking costs.²⁶ BellSouth also identified specific areas where actual data of the ILEC should be used in the development of forward-looking costs. Actual data in many instances are reflective of forward-looking cost characteristics. For example, as BellSouth explained, actual data show that utilization rates have been fairly stable over time. Given the relative stability of utilization rates, there is no reason to expect future utilization levels to change radically. Thus, recent experience is reflective of expected utilization in the future, *i.e.*, forward-looking.

A few commenters raise a variety of objections to the use of actual data in developing forward-looking costs. Some attempt to define "actual" data as the equivalent of embedded costs. Others argue that actual data would carry an ILEC's past inefficiencies into the forward-looking cost calculation.²⁷ These arguments are simply make-weight.

As noted above, actual experience can be reflective of the experience that is expected in the future. The fact that a future relationship is not expected to change from a past relationship does not mean that the cost study is embedded or that it is relying on "embedded" costs. Commenters who oppose the use of actual data call upon the term "embedded" as a talisman that will ward off the Commission from appropriately changing TELRIC from a purely hypothetical

²⁶ See, e.g., BellSouth Comments at 3.

²⁷ See, e.g., MCI Comments at 4.

methodology. Actual data should be used if it appropriately reflects expected efficient forward-looking costs or relationships. Such data provide the most accurate reflection of influencing factors, such as vendors' contracts, labor rates, exempt material prices and any outsourcing initiatives. Accordingly, the Commission should not shy away from relying on actual data because a commenter misrepresents such data as "embedded."

Indeed, even AT&T acknowledges that with respect to expense calculations, the preferential way for estimating such costs should be based on relationships derived from actual data: "[t]he least arbitrary solution to computing expense factors is to estimate forward-looking expenses based on the ratio of existing expenses to existing direct costs."²⁸

While AT&T accepts the relevance of actual data in computing expense factors, an essay prepared by Mark Bryant and submitted by AT&T suggests that the expense levels only reflect the actual expenses incurred by the ILEC on a historical or current basis and, therefore, are not hyper-efficient.²⁹ A simple example, however, demonstrates that Bryant's conclusion is off the mark. If current investment is \$100 and current expenses are \$10, the ratio of expense to investment is .1. In the forward-looking study, if the investment is \$50, then the resulting expenses would only be \$5.00, which is well below the current level of expenses that Bryant contends are reflected by use of an expense factor based on actual data.³⁰

²⁸ AT&T Comments at 101. AT&T advocates the use of ARMIS data to develop expense factors. BellSouth believes that ARMIS data may not provide the level of detail needed and other ILEC data may be necessary. Nevertheless, the key point is that actual data is relevant to the calculation of forward-looking costs.

²⁹ Mark Bryant, TELRIC Models Properly Account for Real World Costs, essay submitted with AT&T's Comments, at 7.9 ("Bryant Essay").

³⁰ Bryant also questions the validity of ILEC accounting records referring to a continuing property record audit. Bryant Essay at 7.5. According to Bryant, the ILEC records may overstate investment. While BellSouth contends that it did not overstate its investment, nevertheless, correcting the "error" would increase the expense factor and accordingly expense levels in a Footnote Continued

In its development of expense-related factors, BellSouth removes expenditures incurred due to service requests. For example, in the calculation of the shared and common factors, Service Order Proportion factors are used to derive the nonrecurring costs associated with Central Office Equipment Expenses (62XX accounts), Terminal Equipment Expenses (63XX accounts), and Cable and Wire Expenses (64XX accounts). Actual service order work hours by network related plant type were retrieved, and a relationship to total work hours was developed for each type of plant. Thus, BellSouth already “back[s] out from the expense accounts any costs recovered through non-recurring charges” as suggested by AT&T expert, Terry Murray.³¹

Likewise, the inefficiency bogeyman raised by some commenters has no substance. BellSouth debunked the notion of the “most efficient” standard in TELRIC. There is no single efficiency standard that can apply to all carriers where the carriers have different obligations. As NERA stated, “an ILEC with a COLR obligation and a CLEC with no corresponding obligation can each operate efficiently in its own way without there ever being a convergence of their respective unit costs to provide the same services. Although we return to this issue later, it is worth noting that, in any new TELRIC methodology, no single efficiency benchmark can – or should – apply to all carriers, regardless of their special or unique obligations.”³²

The Competitive Enterprise Institute put the efficiency debate in perspective: “the [efficiency] standard set by TELRIC is of no particular relevance to the problem facing today’s networks; it cannot provide the correct investment incentives. Some day, a perfectly efficient

forward-looking study because the investment level would be reduced while the expense levels remain the same.

³¹ Declaration of Terry L. Murray, submitted with AT&T Comments, at 104, ¶ 254 (“Murray Declaration”).

³² NERA Declaration at 10, ¶ 24.

future network that provides the same services as today's may exist; but one may not directly regulate such a creature into existence without bypassing the process of learning, experimentation and discovery that is the root of market efficiency.”³³ The argument that the “most efficient” standard forecloses the use of actual data cannot serve as an indictment of the actual data because it is the “most efficient” standard that is invalid, not the use of actual data in a forward-looking study. Indeed, even AT&T's expert concedes that forward-looking costs should reflect reasonably expected efficient levels, not cost levels associated with a hypothetical, most-efficient firm.³⁴

A consistent theme from the opposing parties is that the incumbents cannot be characterized as being efficient, even under the auspices of price or incentive regulation plans. NERA debunks this claim.³⁵ Furthermore, as NERA explains, the opposing parties have not explained why the same efficiency standard should apply to incumbents and entrants alike despite their obviously different operating circumstances. This failure leaves intact the Commission's reasoning behind its tentative conclusion, namely, that TELRIC should reflect the costs of an efficient carrier that is subject to specific real-world attributes of its network.³⁶

³³ Competitive Enterprise Institute Comments at 4.

³⁴ According to Dr. Willig, “LRIC-based pricing does not require that rates reflect any prospects of even lower levels of cost than can reasonably be expected to be achieved via future productivity improvements. Rather, appropriate LRIC-based rates can incorporate only current efficient costs.” Willig Declaration at 12, ¶ 20. Despite Willig's admonition, AT&T does not hesitate to argue through the Declaration of Terry Murray that “[i]n an efficient network, orders for UNEs flow through the OSS (preordering, provisioning, repair, maintenance, and billing) with little or no manual intervention.” Murray Declaration at 80, ¶ 197. In other words, Murray does not suggest a standard based on reasonable productivity improvements as Willig argues is appropriate; but instead argues for the “perfect” standard that no firm, no matter how efficient it is, can ever achieve.

³⁵ NERA Reply Declaration at 25-28, ¶¶ 46-51

³⁶ *Id.* at 28, ¶ 52.

An argument related to the efficiency debate is the perceived advantage of ILECs' economies of scale and scope. This "advantage" is a double-edged sword. While it is true that the incumbents' cost structure reflects efficiencies gleaned through the sheer magnitude of its network, the COLR obligations mean that incumbents do not have the flexibility that the competing carriers have of serving only niche markets. Thus, the incumbents must provide facilities to every household whether or not it is economic or efficient to do so; *i.e.* they incur all the cost and associated risk in deploying a ubiquitous network without the assurance that revenues will adequately compensate them. Yet under the current TELRIC implementation (*i.e.*, "most efficient"), the incumbents are being held to efficiency and network design standards that only a competitor unencumbered by any such obligation could even have a chance of achieving. In fact, a new firm, without the obligation to serve all customers at the time they demand service, would not instantaneously develop a perfectly sized network with the latest technology to serve all customers. Instead, new entrants would likely serve a market on an incremental basis, perhaps waiting until demand reaches a critical threshold before constructing any facilities. (Indeed some of the parties make just such a claim when discussing their view of why facilities-based competition has not flourished and their contention that it is necessary to achieve a "critical mass" to overcome perceived high nonrecurring charges.) The consequences of COLR obligations impact utilization rates, technology choices and equipment locations, and routing design. Accordingly, they must be fully taken into account by the Commission in reaching its determinations in this proceeding.

C. Network Issues—Network Routing and Construction (§§ 63-66)

Some parties argue that the cost method should be based on developing the costs of a local network that is installed (or “valued”) at a single point in time.³⁷ Such an approach is inappropriate. The cost studies must recognize that the costs are expected to be incurred going forward from the current state to an efficient, attainable structure – a structure that will still reflect a mix of technologies. The most efficient way to change a practice in the future often does not match what the company would do if it could start from scratch every day. More importantly, no company – incumbent or new entrant – can start from scratch every day. As discussed above, the long-run incremental cost of providing network elements must be estimated in view of the real-world constraints faced by actual ILECs.

Indeed, the assumption that the network can be optimally built at a single point in time itself is predicated on the improper assumption that the incumbent is completely unencumbered by its past. Furthermore, such an approach incorrectly supposes that the incumbent can re-engineer and re-optimize existing switches and outside plant without additional cost. This supposition represents a significant departure from forward-looking network designs that minimize costs.

In their comments, several parties have complimented the BellSouth Telecommunications Loop Model[®] (“BSTLM”) as a model that most closely reflects real-world attributes due to the incorporation of geocoded customer locations and the use of a minimum spanning road tree (“MSRT”) algorithm to calculate cable requirements. In discussing the BSTLM’s ability to

³⁷ Riolo Declaration at 75, ¶ 141.

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reflect “real-world attributes,” however, they ignore the fact that because of the current TELRIC rules, the model optimizes (*i.e.*, does not reflect real-world) placements of equipment including remote terminal sites based strictly on engineering rules, *i.e.*, based on line counts and loop distance, instead of reflecting the fact that the network has grown over time to serve demand and that any future network deployed by BellSouth will be influenced by the existing cable routes and equipment placements. For example, cable routes have been placed over time based on incremental growth and development as the population increased and dispersed. Electronics were optimally (at that time) placed as this demand materialized. To ignore the existing network configuration, consisting of billions of dollars of investment, built to serve an entire territory, and its strong influence over future network decisions is absurd.

In its current form, the BSTLM begins at the farthest point of the serving area and “clusters” customers based on design rules to locate the remote terminal. While this approach produces an optimized arrangement, it ignores the fact that this is not the way the network is actually constructed. As BellSouth discussed in its comments, the network grows over time and the location of remote terminals evolves with that growth. Thus, when the Commission amends its rules to require the use of more “real-world” attributes, the current BSTLM approach could require adjustment. Instead of allowing the model to select the remote terminal location, the geocoded remote site³⁸ could be taken as a given (similar to the manner in which wire center

³⁸ BellSouth has this data. This fact disproves claims that the incumbents do not have additional data that would move TELRIC toward a real-world perspective. Furthermore, Klick’s unsubstantiated contention that the ILECs possess data on the configuration and composition of their outside plant networks is false. Declaration of John C. Klick, submitted with AT&T Comments, at 33-34, ¶ 63 (“Klick Declaration”). BellSouth makes every effort to maintain outside plant records with the most up-to-date information available. For example, to determine the actual location of its remote terminals, BellSouth used Global Positioning Satellite (“GPS”) data and updated the outside plant records to include this information.

locations are handled today) and the customers would be “re-clustered” to be served from that location. Furthermore, BellSouth would not simply stop with current loop characteristics and locations; it would apply planning guidelines to modify, as needed, existing configurations to reflect forward-looking configurations.

While the BSTLM reflects certain real-world attributes, *e.g.*, customer locations, there are other attributes, equally important, that are not reflected, yet should be. The Commission should modify its rules to explicitly recognize the obligations the ILECs must bear. In particular, COLR obligations have a direct impact on loop modeling. Consistent with their COLR obligations, incumbents build to locations that are currently vacant in order to maintain the flexibility required to provide service “on-demand.” This practice is both forward-looking (*i.e.*, nothing anticipated in the future will lift the incumbents’ COLR obligations) and it is economically efficient (*i.e.*, it is more efficient to provision as many locations as possible instead of going back only when a customer moves in). Thus, at any point in time, even in the long-run, a certain percentage of the outside plant facilities will be constructed to locations that are currently vacant, and, at any given time, current customers must bear the cost of these facilities. Accordingly, while the current TELRIC rules do not prohibit consideration of vacant locations, the Commission should explicitly acknowledge the legitimacy of building a network to non-revenue producing locations, including the impact on utilization rates.

D. Network Issues – Technology (§§ 67-70)

The current TELRIC methodology selects from the most efficient telecommunications technology currently available. This approach is but a corollary to the most efficient carrier standard that the hypothetical model imposes. As discussed above, the most efficient standard is flawed and should be abandoned. With respect to selection of technology, TELRIC should incorporate the incumbents' current network deployment rules and plans.

Such plans take into account all the circumstances that must be considered in the deployment of new technology, and, accordingly, establish the conditions wherein placement of the new technology would be efficient. BellSouth has faced numerous challenges to its technology choices reflected in the cost studies based on allegations that the technology used by BellSouth is "old technology." These challenges have been shown to be without substance. For example, during the Commission's review of BellSouth's 5-state application for long distance relief (WC Docket No. 02-150), AT&T complained that BellSouth's termination of trunks on Digital Line Trunk Units ("DLTU") in 5ESS switches was based on an outdated technology and that a lower cost new technology should be used. AT&T contended that BellSouth should have exclusively used the SONET-based Digital Network Unit-SONET ("DNUS"). While the DNUS may be the latest technology offered by Lucent for trunk terminations, it does not constitute the most forward-looking, economical deployment for all trunk terminations. The use of the DNUS decreases the cost per trunk, but only if it is fully utilized. The DNUS is a high capacity interface, capable of terminating 8,064 trunks. Thus, the utilization is relatively low except in a limited number of central offices where demand for trunk terminations is extremely high. The DNUS also requires that the interfaces be at the DS3 level; therefore, in some offices, expensive

equipment external to the switch to multiplex individual DS1s to the DS3 level would be required. The Commission rejected AT&T's argument.³⁹

Another example would be criticisms of BellSouth's deployment of two types of digital loop carrier systems, integrated and universal. Some have argued that integrated digital loop carrier is the most "forward-looking" and have defined the type of integrated digital loop carrier to be 100% GR303 compliant. While integrated digital loop carrier is the most forward-looking technology for switched lines, the contention that unbundled (*i.e.*, non-switched) loops should be provided over integrated GR303 is inappropriate. Since stand-alone unbundled loops do not terminate in BellSouth's switch, unbundled loops cannot ride an integrated system without costly work-arounds. Even for switched lines (*e.g.*, UNE-P), only a limited number of BellSouth's switched lines are served by GR303 today, and this will only change slowly over time. Additionally, integrated carrier is the forward-looking technology only for specific applications. There are circumstances where it would make economic sense to deploy universal digital loop carrier, such as where isolated demand for non-switched circuits is present. Because cost studies are based on the network as a whole, the impact of these cases where universal digital loop carrier is placed must be considered. Additionally, this mixture of technologies, universal and integrated, will continue into the future. Thus, the question becomes one of what constitutes a forward-looking mix of technologies, not which particular technology should be used

³⁹ The Commission found that "[g]iven the lack of any state record on this issue, AT&T's unsupported assertions, and BellSouth's reasonable explanation that DNUS is the cost-minimizing technology only where growth rates are high, we conclude that AT&T has not demonstrated that any of the states committed clear error in adopting BellSouth's assumption regarding trunk equipment technology." *In the Matter of Joint Application by BellSouth Corporation, BellSouth Telecommunications, Inc., And BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Alabama, Kentucky, Mississippi, North Carolina, and South Carolina*, WC Docket No. 02-150, *Memorandum Opinion and Order*, 17 FCC Rcd 17595, 17637, ¶ 86 (2002) ("*BellSouth Multistate Order*").

exclusively. Contrary to implied assertions by some commenters in this proceeding, BellSouth supports using a projected mix of future deployment, not reproducing the current (or “embedded”) mix of technologies.⁴⁰ Accordingly, the technology mix utilized in cost development should reflect BellSouth’s engineering guidelines and future deployment plans, not an arbitrary estimate of some “most efficient” provider.⁴¹

The guidelines that are relevant are those related to the narrowband network. Thus, the design criteria must reflect economically efficient technologies and capacity limitations under that assumption. However, as the narrowband and broadband networks converge in the future, a rational means of attributing costs must be established. BellSouth believes cost causation should drive costs to the appropriate service and that an arbitrary allocation method violates economic principles of cost causation and must be avoided.

⁴⁰ See, e.g., AT&T Comments at 43-47; MCI Comments at 18-21.

⁴¹ In evaluating these guidelines, one must remember that these documents are just that – guidelines. The incumbents’ engineers will not have the opportunity to fully implement each and every one of the suggested guidelines contained these documents due to the constraints of the existing network and demand. For example, while the guidelines may suggest placing fiber in the distribution – when it is economically feasible, the vast majority of the network is comprised of copper distribution – a fact that will not change in the near future. Indeed, the cost models reflect the most economic manner in which to serve the narrowband customer, which is copper distribution.

E. Network Issues – Structure Sharing and Fill Factors (¶¶ 71-75)

The debate over “forward-looking, long-run” structure sharing illustrates the clash between the unattainable, hypothetical world advocated by the CLECs and the realities of the world in which the incumbents operate. Sharing opportunities exist today and may even increase slightly over time; however, the amount of sharing will never reach the level anticipated by the competitors. Instead of predicting increased sharing situations based on supposition, real-world, actual results are indicative of how often the incumbents really can partake in the joint construction of structures. BellSouth contends that the Commission should take a realistic view of this issue and not be swayed by visions of ubiquitous sharing opportunities. Outside plant construction is not a “Field of Dreams” where “if the incumbents build it, they will come.”

Riolo, on AT&T’s behalf, claims that: “an efficient carrier would have strong economic and legal incentives to share their outside plant structure.”⁴² BellSouth agrees and will continue to share structure costs as often as possible for the reasons Riolo surmises: to reduce costs and to comply with local ordinances. Indeed, in order to promote sharing opportunities, the utility coordinating committees cited by Riolo were established.⁴³ (Another, and probably more important, reason these committees exist is to safeguard existing plant. These committees inform utilities of upcoming projects such that facilities that have already been placed will not be disturbed or damaged.) Nevertheless, this does not mean that just because the potential “sharers” are informed by these committees of upcoming structure placements, that they will be ready to place structure at the same time.

⁴² Riolo Declaration at 41, ¶ 79.

⁴³ *Id.* at 49-50, ¶ 95.

Likewise, local ordinances are not a new phenomenon – they have existed for many years. Thus, they are not an impetus to increased sharing. Indeed, the incumbents’ construction forces already adhere to the requirements to jointly place structure as much as possible. Furthermore, the ordinances contain such caveats as “to the greatest extent possible,” “reasonably practical,” “reasonable effort” and “if appropriate” – even the local governing bodies recognize it is not always possible to jointly place facilities.⁴⁴

Structure sharing is one of the most significant inputs CLECs attempt to manipulate to artificially lower rates to a level below one attainable by any carrier. Structure sharing inputs, in a TELRIC model, do not apply only to new areas of development (which in the real world are only the opportunities for sharing). Instead, sharing assumptions affect the entire network that is modeled. For example, if structure sharing of buried placement costs is set at 50%, that means that the TELRIC model includes only 50% of the buried placement costs for **every foot** of buried trenching, plowing, etc., along **every cable section**, in **every route**, in **every wire center**. To assume significant sharing of buried and underground structure in a world where parties (*i.e.*, power companies and CATV providers) that would potentially share structure with a telecommunications company already have facilities in place is unrealistic and invalid.

1. Aerial Structure⁴⁵

Riolo’s statement that “the sharing of aerial structure is quite common,” is correct; however, his contention that sharing of poles will increase is wrong.⁴⁶ In discussing changes to

⁴⁴ See *id.* at 51-52, n.69.

⁴⁵ BellSouth reflects the effects of structure sharing for poles through the plant-specific expense factor by including net rent (rent revenue less rent expense).

⁴⁶ Riolo Declaration at 47, ¶ 89.

placement techniques that will allow CATV placements to migrate from aerial, Riolo claims: “the cable industry has recently migrated to a fiber-based design which is receptive to placement in buried and underground environments.”⁴⁷ Yet, later in his declaration, he contends that: “on a going-forward basis as CATV penetration increases, there should be increased opportunities for the incumbents to share pole structures.”⁴⁸ It is difficult to reconcile the two claims – CATV companies supposedly will not be placing as many aerial cables, but “increased opportunities” to “share pole structures” will exist “on a going-forward basis.” Furthermore, Riolo bases his claim on unsupported “increases” to CATV penetration (ignoring the increase of satellite subscribers).

2. Underground Structure

With respect to sharing of underground structures (conduit), due to work coordination, safety, and available space considerations, significant sharing of underground construction is very unlikely and BellSouth seldom, if ever, shares in underground excavation activities. Underground structure sharing would occur only when BellSouth is excavating for new underground conduit and other parties are willing to share that excavation and conduit cost with BellSouth. BellSouth rarely, if ever, jointly places conduit with another party.

BellSouth does, however, lease conduit space to other parties. Leasing of duct space, however, is not the same as sharing the construction cost and ownership of conduit. Duct leasing is included in BellSouth’s studies in the Conduit Plant-Specific factor.⁴⁹ Expenses associated

⁴⁷ *Id.* at 44, ¶ 83.

⁴⁸ *Id.* at 47, ¶ 89.

⁴⁹ If BellSouth is required to conduct a bottoms-up study, in which sharing of underground facilities is a direct input, BellSouth uses the percentage of duct space leased to other parties as a surrogate of potential opportunities for underground structure sharing.

with BellSouth leasing duct space in other parties' ducts are netted with revenues received from other parties leasing BellSouth owned ducts and are included in the plant-specific expenses.

3. Buried Structure

Buried structure sharing is rare due to timing problems with other utilities. Even in a scorched node scenario envisioned by this Commission's current TELRIC guidelines, CATV and power lines are already in place, so, contrary to Mr. Riolo's contention, the opportunities for sharing are no better than BellSouth has seen in the past unless the CLECs plan to begin constructing their own facilities throughout the feeder and distribution plant in all areas of BellSouth's territory.

Even ALTS' expert recognizes that the opportunities of sharing buried cable trenching and placement is extremely limited, even in the long run:

Even within the context of a long run study it is appropriate to recognize difficulties involved in attempting to share the cost of buried cable trenching and placement with other entities. Because of voltage differences and safety concerns, sharing of buried costs with the electric utility is relatively difficult and rare. The primary opportunity for sharing of buried structure costs occurs in new subdivisions, where cable TV and telephone cable can sometimes be placed simultaneously. Even in the context of a 'fresh build' scenario, this type of cost sharing would not necessarily be possible along every route, because it still assumes a degree of scheduling coordination with another entity which may not be feasible (e.g., if the cable TV carrier has already installed its cable.)⁵⁰

Parties that contend there are greater opportunities for buried structure sharing essentially extrapolate the isolated occurrence into a general happening, which, as ALTS shows, will not occur. Moreover, even in a true scorched node study, where the entire telecommunications network is rebuilt, installation costs would increase substantially over that which is captured by BellSouth in its studies. A true scorched node study would need to reflect the acquisition of all

⁵⁰ BJA Analysis at 39 (emphasis added).

rights-of-way, purchase/lease of all the required land, construction of all new central office buildings, and building of all the support structures from scratch. In addition, in a scorched node study, only the telephone network is being constructed. Thus, all of the driveways, roads, railways, etc. exist and cable must be placed through (over or under) these obstacles, increasing installation costs. The full impact of these expenditures is not taken into account in current TELRIC studies.

4. Fill Factors

Under the current TELRIC method, the per unit costs associated with a particular element “must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element.”⁵¹ Thus, the Commission embraced a projected, actual fill factor and anticipated that all of the cost of usable capacity of an incumbent carriers (regardless of whether all of that capacity is being used at any given moment) should be considered in the cost calculation.

Therefore, it makes no sense to attempt to isolate a single facility and determine the utilization over the entire economic life of that individual facility. The telecommunications network grows in lumps; cross sections of loops range from less than 20% fill to the point where relief is necessary. BellSouth continues to place new facilities throughout its network; therefore, the “lumpiness” inherent in the network will continue in the future.⁵² Only by looking at the network as a whole can one determine an accurate projection of utilization. In reality, the fill factor in a legitimate study, such as BellSouth’s, must represent an average fill of many items of

⁵¹ *First Report and Order*, 11 FCC Rcd at 15847, ¶ 682.

⁵² This is not the same as breakage referenced in the comments, which is due to standardized cable sizes.

plant. Some items have been in service for years and have a high fill rate. Others have been recently placed and have a low fill rate. Over time, individual items reach capacity and new items are continually added. As explained in its initial comments, BellSouth's experience shows that the overall utilization rates do not change significantly over time. For that reason, BellSouth avers that current actual fill provides a sound estimate of projected actual fill.

Riolo concludes that "distribution spare capacity would not be exhausted for over 25 years" assuming a 40% fill and growth of 3% annually.⁵³ His calculations, however, only reflect a single cable – not the dynamic nature of the network, which is comprised of many cables and many cross sections. A 40% distribution fill simply means that, on average, at any given time, 40% of the capacity of all cables is occupied with working pairs and that the costs associated with the 60% unused capacity must be borne by existing customers if the ILECS are to be allowed to recover their costs. In reality, some distribution cables may be operating at much less than 40% while other cables in the network may be operating at fill levels that require immediate relief. In BellSouth's loop studies based on the BSTLM, the same is true. The model requires two pairs per residential customer location and a pair (or two pairs for 4-wire circuits) for each working line at each business location. Depending upon the size cable required, a specific cable in the model may have more or less than 40% fill. The important point is that on average the model produces a distribution fill of 40-45% that closely matches the fill seen in BellSouth's actual network.

⁵³ Riolo Declaration ¶ 59.

a) Copper Distribution

As explained previously, customer locations in the BSTLM reflect actual customers; no growth is considered and vacant locations have not been included. Further, as Riolo alludes, BellSouth assumes two pairs per residential household.⁵⁴ BellSouth's BSTLM studies assume two pairs for each residential customer location with service regardless of the number of services currently at that location. If the location record shows three lines (requiring three pairs) at a location, the model still only places two distribution pairs. (Riolo fails to mention that for business customers (approximately 30% of the demand), only the actual number of pairs required to provide the existing services at each business location are included.) Indeed, BSTLM results, where utilization is not an input into the model, support the fact that the 2-pair per existing residential location assumption produces a fill that closely matches the actual distribution fill experienced in BellSouth's network. Actual distribution fill, defined as (working + cut through)/(available), runs in the 40% range – exactly the same range produced by the BSTLM for the forward-looking network (even though BellSouth only includes working pairs in the numerator. As mentioned previously, COLR obligations force the incumbents to maintain facilities to non-revenue producing locations in order to expedite “on-demand” provisioning. Indeed, the impact of COLR obligations with respect to utilization is not due to “rural areas where the cost of providing services is high,” as Riolo claims.⁵⁵ To the contrary, the cost results of being prepared to serve vacant locations are also part of the incumbent's COLR obligation.

⁵⁴ See *id.* at 29, ¶ 57.

⁵⁵ *Id.* at 35, ¶ 67.

This COLR obligation has a definite impact on an ILEC's cost whereas a CLEC that is able to select where and when to place facilities would not incur these expenditures.

b) Copper Feeder

Copper feeder fill should be higher than distribution fill in a TELRIC study, just as it is in the real world. As with distribution, BellSouth's copper feeder fill has remained relatively stable over time indicating a realistic forward-looking feeder utilization rate should not differ from those actually experienced. Riolo's contention that copper feeder utilization should be even higher based on when fill-at-relief occurs again fails to acknowledge the dynamic nature of the network.⁵⁶ While one cable may be ready to be "relieved" because it is at 85-90% utilization, at the same point in time another feeder section may only be at 30% utilization. Utilization must reflect the entire network – not a single cable.

c) Fiber Feeder

It makes little sense to discuss fiber cable utilization since it is the electronics that drive the overall utilization of the cable. BellSouth, however, would propose that the spare associated with the number of vacant fiber strands resulting from breakage must be included as a cost in a TELRIC study.

Loop electronics fill should allow for short-term growth, churn, breakage and maintenance spares. Typically, fill for loop electronics is higher in the central office equipment than it is for remote terminals since the central office terminals can take advantage of consolidation of several remote terminals into one central office terminal.

⁵⁶ See *id.* at 32, ¶ 63.

F. Cost of Capital (§§ 82-91)

1. Capital Structure

As BellSouth demonstrated, the UNE cost of capital should be estimated using market-based measures of the capital structure drawn from competitive markets.⁵⁷ The Declaration of Matthew I. Kahal incorrectly states that a book value-based capital structure is more appropriate than a market-value based capital structure in this context.⁵⁸ As discussed by Dr. Billingsley, “reliance on book value-based capital structures is inconsistent with financial theory, at variance with commonly-accepted financial practice, and contradicts the tenets of the FCC’s total element long-run incremental cost (TELRIC) pricing approach.”⁵⁹

2. Costs of Equity and Debt

The cost of equity and debt should also be estimated using market-based measures drawn from competitive markets. The single-stage discounted cash flow (“DCF”) approach used by Dr. Billingsley is superior to and more objective than the three-stage DCF model approach used by both Kahal and Murray.⁶⁰ The three-stage model is complex, subjective, and uses growth rate forecasts that reflect individuals’ opinions rather than the consensus of the investment community. The estimation of the cost of equity associated with the provision of UNEs is the equity investors’ return requirement. This analysis should reflect the investment analysis process

⁵⁷ Statement of Dr. Randall S. Billingsley, CFA, on Behalf of BellSouth Telecommunications, Inc., December 16, 2003, Exhibit 2 to BellSouth Comments, at 13-16 (“Billingsley Statement”).

⁵⁸ Declaration of Matthew I. Kahal on Behalf of MCI, submitted with MCI Comments, at 3 (“Kahal Declaration”).

⁵⁹ Attachment 2, Reply Comments of Dr. Randall S. Billingsley at. 3 (“Billingsley Reply Comments”).

⁶⁰ See Murray Declaration and Kahal Declaration.

and expectations of investors. However, the three-stage approach used by Kahal and Murray to estimate the cost of equity substitutes their opinions for investors' opinions in two out of the three stages of their analyses.

3. Importance of Competition and Cost of Capital Estimation

It is universally recognized in cost of capital analysis that greater investment risks require higher capital costs. Competition is a commonly discussed risk in investment analysis. Dr. Billingsley rebuts the incorrect arguments made concerning the importance of competition in cost of capital analysis presented by Selwyn and Murray.⁶¹

As discussed by Dr. Billingsley in his Declaration, analysis of the S&P 500 indicates that a conservative, market-determined cost of equity capital estimate for providing UNEs is 14.28%. The appropriate cost of debt for providing UNEs is 6.73%, which is the current yield on the average bond rating of BBB+ for the S&P 500. The average market value-based capital structure for the S&P 500 is 30.50% debt and 69.50% equity. Combining the cost of capital parameters determined by Dr. Billingsley indicates that the forward-looking overall cost of capital associated with providing UNEs is 11.98%.

⁶¹ See Billingsley Reply Comments at 16-20.

G. Depreciation (§§ 92-108)

In its comments, BellSouth demonstrated that the most appropriate economic lives to use for determining depreciation expense associated with UNE prices are those supported by BellSouth's Economic Life Study.⁶² This study provides detailed analysis of the factors that impact the economic life for each relevant asset group. BellSouth also uses those economic lives to determine depreciation rates used for financial reporting purposes. Nothing in the comments of other parties alters BellSouth's conclusion.

Several commenters argue that "GAAP lives" are not suited for UNE purposes. At the outset, it should be clarified that GAAP has not released a particular set of lives. Rather, GAAP directs that companies take a number of factors into consideration when determining useful life, including technological change, normal deterioration, and actual physical usage. The lives resulting from BellSouth's Economic Life Study meet those criteria.

AT&T, through the declaration of Richard B. Lee, argues in paragraph 36 of his declaration that financial lives are governed by the GAAP conservatism principle, which requires the use of shorter asset lives.⁶³ This opinion is echoed by Michael Majoros, on behalf of MCI.⁶⁴ As BellSouth pointed out in its comments, there is no basis for this argument. GAAP literature clearly dispels the notion that the conservatism principle should guide financial statements.⁶⁵ Further, the declaration of John Lacey, a member of the Accounting Standards Executive

⁶² The Economic Life Study was included as Exhibit 5 to BellSouth's Comments.

⁶³ Declaration of Richard B. Lee, submitted with AT&T Comments, at 19, ¶ 36 ("Lee Declaration").

⁶⁴ Declaration of Michael J. Majoros, Jr., submitted with MCI Comments, at 23 ("Majoros Declaration").

⁶⁵ See BellSouth Comments at 39-40, n. 34.

Committee (“AcSEC”) at the time this issue was finally resolved and obviously an authority on the subject, puts an end to this issue:

At one time the AICPA, in Accounting Principles Board Statement Number 4, stated that the application of the conservatism principle meant that ‘possible errors in measurement [should] be in the direction of understatement rather than overstatement of net income and net assets.’ However, in 1993, AcSEC (of which I was a member at the time) specifically *rescinded* APB Statement Number 4 because this conception of conservatism had long been rejected by the FASB.⁶⁶

Lee and Majoros contend that the most appropriate lives for use in UNE studies are those last prescribed by the Commission for use in interstate booking of depreciation expense, or those in the Commission’s range of lives. Although these commenters provide lip-service to the concept of forward-looking lives, they attempt to support their case by delving into history. Both cite statements made in years past by the Commission regarding the forward-looking nature of regulatory lives. Majoros complains that “the FCC now seems to indicate in the *NPRM* that these lives may no longer be forward looking for either theoretical or empirical reasons.”⁶⁷ He chides the Commission for harboring such thoughts: “[h]owever, any reasonable interpretation of the evidence continues to support the forward-looking nature of the FCC’s asset lives.”⁶⁸

The Lee and Majoros Declarations also include numerous attachments in which they recount years and years of historical reserve levels and retirement activity, again attempting to support their claim that regulatory lives are forward-looking by turning to history. They

⁶⁶ Declaration of John M. Lacey, submitted with Verizon Comments, at 15-16, ¶ 33 (footnotes omitted) (“Lacey Declaration”).

⁶⁷ Majoros Declaration at 11.

⁶⁸ *Id.* In contrast, BellSouth welcomes the opportunity to present support for the forward-looking lives that it proposes for use in UNE studies and uses for financial reporting purposes. Documentation of life assessment can be found in BellSouth’s Economic Life Study. This detailed analysis makes clear that BellSouth’s economic lives are not merely “the opinion of management,” as Majoros alleges. *Id.* at 22.

continue their all-too-familiar, but nonetheless incorrect, attempt to project the future by simply looking over their shoulders. Certainly, the future of technological development cannot be determined by merely looking at the past. An analysis of how a new technology substitutes for an old one, as detailed in BellSouth's Economic Life Study, is crucial in determining life expectations for technology-sensitive assets. Simply relying on historical information is clearly inadequate.

Another item that Majoros and Lee offer to support use of the Commission's prescribed lives is a series of Geometric Mean Turnover ("GMT") studies. This is one more example of their rear-view mirror approach. Turnover studies are a relic of the past. Today, there are more sophisticated means of asset life determination. Majoros indicates that the turnover method "is a widely accepted method."⁶⁹ What Majoros cannot say, however, is that the turnover method is widely used, because it is not. There is clear evidence to support the notion that this method is outdated. In their discussion of the turnover method, Fitch and Wolf⁷⁰ state:

Before the 1950's, turnover methods were the predominate means of analysis used to provide indications of service life when only unaged data were available. These methods have been replaced by the SPR method and are now of primarily historical interest

⁶⁹ *Id.* at 19. While claiming in his declaration that the turnover method is widely accepted, it should be noted Majoros does not confirm that MCI uses this approach. Likewise Lee in his declaration also advocates turnover studies but does not confirm that AT&T uses this approach.

⁷⁰ Frank K. Wolf and Chester W. Fitch, *Depreciation Systems* 218 (Iowa State University Press 1994).

One can find additional evidence of the ancient character of turnover methods in the NARUC document⁷¹ cited by Majoros. On Page 92 of the “Limitations” section, this document states:

The use of turnover methods has decreased considerably with the increased experience in applying and interpreting the result of improved life analysis methods.

There are also drawbacks to using turnover methods. One drawback noted by NARUC is that:

All the methods assume uniformity for the growth ratio and the dispersion of retirements for each vintage. A more reliable estimate may be made if the property has experienced at least one life cycle (roughly twice average life) since, under the constancy assumptions above, the property will be at stability. Since utility property typically does not meet the above constancy assumptions, the methods may produce considerable variation in life indications.⁷²

Not only did Lee and Majoros use an outdated life determination method, they used it for asset groups that are being technologically displaced. These are assets for which turnover methods and other approaches that use retirements to predict the future are simply inadequate. Turnover methods do not involve the appropriate use of substitution analysis techniques and consistent unit values, such as access lines or circuits. Therefore, they do not capture the displacement of new technologies for older ones, and thus result in inappropriate asset lives.

Lee attempts to document a methodical process for calculating AT&T projection lives.⁷³ He then compares these lives to the Commission’s range of lives and claims that AT&T’s projection lives are at the high end of the Commission’s range. Of course, these are not AT&T’s projection lives, because, as Lee clearly shows, these lives were not calculated using AT&T data

⁷¹ *Public Utility Depreciation Practices* 92 (National Association of Regulatory Utility Commissioners, 1996).

⁷² *Id.*

⁷³ Lee Declaration at 22, ¶ 43 and Attachment 7.

exclusively. Instead, Lee uses results from studies performed by Technology Futures, Inc. (“TFI”)⁷⁴ that are based solely on ILEC data. Using a ratio based on ILEC remaining life data and applying this ratio to AT&T’s remaining lives is a convoluted and inappropriate approach to arriving at AT&T’s projection lives, and the results are meaningless. While the approach to determining AT&T’s projection lives is flawed, Lee does validate TFI study results by using them in his analysis. It is surprising that Lee even relied on TFI studies. Majoros, an associate of Lee in the firm Snively King Majoros O’Connor and Lee, is critical of studies performed by Technology Futures in this proceeding.⁷⁵

Lee makes some other interesting comments about AT&T’s lives in paragraphs 44 and 45 of his declaration. He states that, for the purpose of planning capital expenditures, AT&T uses one life for all types of assets. He then describes this life as follows:

Finally, and of greatest importance, the life used is intentionally very conservative (i.e. – short) The deliberate use of short plant lives for capital expenditure planning provides a margin of safely (sic) against the risk of overoptimism by project planners.⁷⁶

With astonishing candor, AT&T verifies this admission:

First, internal corporate planning lives are deliberately set on the short side to provide a margin of safety against expected over-exuberance by project proponents.⁷⁷

The arbitrary elements found in AT&T’s process for determining lives are not a part of BellSouth’s economic life studies. BellSouth’s approach to asset lives is much more objective

⁷⁴ A consulting firm that, along with other services, conducts asset life studies.

⁷⁵ Majoros Declaration at 13, 23.

⁷⁶ Lee Declaration at 23, ¶ 45.

⁷⁷ AT&T Comments at 97.

and straight-forward. BellSouth performs detailed analyses, which were provided in the Economic Life Study as an exhibit to BellSouth's Comments in this proceeding. They are used for determining depreciation rates for financial reporting and intrastate reporting purposes; they are also used for planning future capital expenditures, and are the economic lives proposed for use in UNE studies.

In his declaration, Lee references various state UNE orders dating back to 1996, in an attempt to illustrate the appropriateness of the Commission's prescribed lives for UNE purposes today. Apparently, not all state commissions share Mr. Lee's opinion. On January 5, 2004, the Indiana Utility Regulatory Commission released an order on UNE prices for SBC in Indiana Cause No. 42393, in which that commission approved the use of financial reporting lives. The order states:

In the first round of TELRIC rate proceedings after passage of the 1996 Act, many state commissions adopted the FCC's regulatory lives for depreciation purposes. At the time, those lives were just a few years old and the FCC had referred to them as a sort of safe harbor for that first round of rate proceedings. (First Report and Order, paragraph 702; TELRIC NPRM, paragraph 95) As the FCC explained to the Supreme Court, the reference to regulatory depreciation lives in the First Report and Order 'merely offer[ed] tentative guidance at a time when state commissions had to make large numbers of ratemaking determinations under the short time frames established in Section 252.' (footnote omitted) Therefore, we reject any claim that we are somehow bound to adopt regulatory lives, or even that they must be used as a starting point. Whatever merit of such an argument may have been in 1996, it carries no weight in 2003.⁷⁸

The order concludes:

⁷⁸ *In the Matter of the Commission Investigation and Generic Proceeding of Rates and Unbundled Network Elements and Collocation for Indiana Bell Telephone Company, Incorporated d/b/a SBC Indiana Pursuant to the Telecommunications Act of 1996 and Related Indiana Statutes*, Cause No. 42393, Order at 65 (Ind. Util. Reg. Comm'n Jan. 5, 2004).

Technological advancement continues at a rapid pace, leading to faster obsolescence of all types of telecommunications equipment. If anything, the pace of technological advancements should only increase as unbundling and pricing determinations are brought more in line with the goals of the 1996 Act in the wake of the 1999 Biennial Order, the Triennial Review Order, and the TELRIC NPRM, and as the incentive for facilities-based investment and innovation increases. We want to encourage SBC Indiana to take advantage of and deploy technological advancements, and one way to do that is to allow it to use reasonable depreciation lives based on criteria SBC employs for financial reporting purposes. We also note the increase in competition faced by SBC Indiana, both intermodal and intramodal, compels use of shorter depreciation lives. (Triennial Review Order, 685) SBC Indiana also has now ‘fully and irreversibly opened’ the local market to competition, as evidenced by the FCC’s grant of Section 271 long-distance authority, and such approvals often accelerate the pace and level of competition for the ILEC. For all of these reasons, we adopt SBC Indiana’s proposal to use financial reporting lives in computing depreciation expense.⁷⁹

Although not raised in the *Notice*, Majoros brings up the topic of salvage. In that regard, his total misrepresentation of the effects of implementing Statement of Financial Accounting Standard 143 (SFAS 143) cannot go unaddressed. First, Majoros points out that the Commission established ranges of net salvage percentages, as they did for lives. These net salvage ranges were established on the same basis as the life ranges, that is, by a statistical analysis of prior prescribed percentages. In his declaration, Majoros alleges that ILECs either do not remove their retired plant at all, or remove at costs far less than the Commission’s ranges. Absolutely no support at all is offered for this claim. BellSouth believes that there should not be a regulatory mandated range of net salvage percentages. However, it turns out that, for the past several years, the net salvage percentages developed by BellSouth, based on an analysis of past costs and future expectations, have fallen within the Commission ranges for practically all asset groups. These net salvage percentages are used in developing depreciation rates for UNE studies and also for

⁷⁹ *Id.* at 66.

financial booking purposes. The fact that BellSouth's net salvage numbers are not materially different from those in the Commission's ranges illustrates the absurdness of Majoros's allegation that BellSouth has stopped removing plant.

On January 1, 2003, BellSouth implemented SFAS143 for financial reporting purposes. This standard calls for recognizing a liability for costs to remove assets that were removed because of some legal obligation. BellSouth, as well as many other telecommunications companies, determined that no legal obligation exists to remove retired plant and thus no special accounting treatment is needed to meet those requirements. However, removals do continue to occur because there are business reasons to remove plant. For some asset groups, in particular the outside plant assets (that is, cable, poles, and conduit), costs of removal exceed any gross salvage gained from disposal. SFAS 143 directs that removal costs for these assets should no longer be accumulated in the depreciation reserve but should be expensed as incurred. This change was made in BellSouth's ongoing operations. Further, in accordance with SFAS 143, costs that had been accrued for those asset groups in anticipation of future removals were reversed from accumulated depreciation and reflected on the income statement as a cumulative effect of accounting change adjustment. Majoros's allegation that these transactions indicate that the ILECs had been collecting for future costs of removal with no intention to really remove is nonsense. The impacts of these transactions were made clear to regulatory bodies and reported in BellSouth's public financial disclosures. SFAS 143 requires that CLECs, as well as ILECs, make similar determinations and bookings. For example, in AT&T's 2002 Annual Report to Shareholders, the following disclosure is made under the heading "New Accounting Pronouncements":

AT&T currently includes, in its group depreciation rates, an amount related to the retirement costs for certain assets. However, such amounts are not legally

enforceable or unavoidable; therefore, AT&T will be required to reverse the amount accrued in accumulated depreciation.

One would expect that MCI, on whose behalf Majoros is participating in this proceeding, may make a similar disclosure once they have their books in order.

The Commission was well aware of SFAS 143, and the ILECs' handling of implementation. They simply made a decision not to order adoption of this standard at the time for Part 32 federal accounting purposes.

In its comments, BellSouth explained how advances in technology tend to shorten the economic lives of network assets. BellSouth also provided specific examples of how technology has shortened the economic lives of assets such as circuit equipment and switching equipment. Contrary to the comments of some parties, there is no need to make arbitrary assumptions about the impact of technological advances on asset lives. BellSouth's Economic Life Study presents an analysis of each major network asset. The study carefully shows how new technology is impacting the old technology in each of the major network asset categories (circuit, switch, cable, along with subcategories). The study uses proven methods that appropriately predict the progression of a new technology as it is deployed in the network.

Technological obsolescence is the greatest factor in determining the life cycle of existing and new equipment in the network. Historical trends fail to predict the demise of a technology early enough to be helpful in recovering the investment in the technology or planning for its replacement. Therefore, technological substitution methods are used to estimate economic life cycles prior to deployment or early in the deployment phase.

The replacement of electromechanical switching by electronic switching is a classic example of rapid technological obsolescence. The historical trends comparing the market shares of these two technologies did not provide clues for the avalanche in the survivor curve that

occurred in the late 1970s. The use of proven substitution analysis predicted the rapid introduction of electronic switching years earlier.

Although telecommunications industry sources are compared with our studies, BellSouth develops its analyses independently and uses data that is specific to BellSouth. This process allows the development of BellSouth-specific economic lives while ensuring that the lives are reasonable from an industry viewpoint.

In his declaration, John C. Klick attempts to show that competition actually lengthens the lives of telecommunications assets. He provides no evidence from the telecommunications industry. Instead, he resorts to examples from other industries. Klick ignores significant differences between the telecommunications industry and these other industries. For example, Klick refers to the resale and reuse of aircraft to illustrate how aircraft lives have been lengthened as competition increased. However, in the telecommunications industry there is little if any secondary demand for old network assets. Equipment that is removed from telecommunications networks has so little value that it does not completely cover the cost of removal. In the case of metallic cable, for example, the cost to remove the cable is greater than the salvage value of the cable.

The electric industry likewise provides a poor example to illustrate the impact of competition. It is true that the lives of older coal and nuclear plants have been lengthened as they have been refurbished and upgraded. These plants can continue to produce electricity, and there is a growing demand for electric power. However, it should be noted that the type of electric power that is needed by customers has not changed since the inception of the power industry in this country.

In stark contrast, the telecommunications needs of customers have changed drastically. The old mechanical switches that were prevalent as late as the 1960s became obsolete and had to be replaced as the need for new capabilities grew. The switches that are most common in the telecommunications network today will also become obsolete when newer technology can provide new capabilities and efficiencies. Old telecommunications equipment simply cannot be refurbished to provide the advancing needs of customers.

Klick's limited attempts to use examples within the telecommunications industry are riddled with seriously misleading statements. For example, he makes it appear that 4 ESS switches are still common in the industry. While AT&T still has several 4E switches for use in their long haul toll network, ILECs have few and BellSouth has none, having removed the last remaining 4E in 2001. These switches were used primarily for toll tandems and have become obsolete due to a lack of features and incompatibility with data traffic requirements.

Klick's comments are also misleading in regard to fiber displacement of metallic cable. He states that, because metallic cables at times remain in service along the same routes as fiber cables, the life of metallic cable is somehow extended due to competition. He fails to recognize the normal progression from one technology to another. Fiber cable is often placed to provide additional capacity for growth. New service requirements are placed on the fiber cable, and over time existing circuits are rolled to the new fiber cable. Eventually all circuits on the metallic cable will be transferred, and the old cable will be removed or retired in place.

Competition often does force companies to reduce costs, and one way to do this is to make the most efficient use of available assets. Often, however, retaining older technologies also leads to higher maintenance costs. Other factors may lead a company to migrate to newer technology, primarily feature availability. In a highly competitive industry such as

telecommunications, companies must be able to offer an up-to-date set of services. While retaining old technology may appear to be economically sound in the short-term, the loss of revenues and the increased maintenance expenses will often prove that new technology must be implemented in order to remain competitive.

H. Nonrecurring Charges (§§ 114-30)

Competitors of BellSouth want the Commission to prohibit nonrecurring costs from being recovered through nonrecurring charges that are assessed directly to the cost causer – the CLEC. Thus, the comments of these parties disgorge a significant amount of misinformation designed to get the Commission to act favorably upon their requests. As shown below, nonrecurring costs reflect one-time expenditures that BellSouth and other ILECs incur to satisfy a CLEC's requests for service. To avoid having BellSouth subsidize competitors, it is appropriate for BellSouth to recover its nonrecurring costs through the assessment of a nonrecurring charge.

One complaint intended to cause the Commission to preclude nonrecurring charges is that they represent a significant up-front cost of doing business that new entrants incur in conjunction with customer acquisition that the incumbent does not need to charge.⁸⁰ When a CLEC acquires a customer and uses UNEs to provide service to that customer, the CLEC is going to request that BellSouth undertake certain activities and establish records in order to make those UNEs work. Indeed, many of the activities BellSouth performs would have to be performed by the CLEC if it were a pure facilities-based carrier and the cost of the activities would be incurred at the time of customer acquisition. It would be illogical to conclude that a facilities-based carrier should bear the nonrecurring costs upon acquiring a customer but that a UNE-based competitor should be insulated from such costs.

The correct economic principle for the recovery of nonrecurring costs is that they be recovered exclusively from nonrecurring charges. The cost causation principle of pricing

⁸⁰ See, e.g., Murray Declaration at 49, ¶ 123.

indicates that costs should be recovered in the manner in which they are generated and from the sources that cause them. To the extent that the cause of nonrecurring costs can be identified, and the costs themselves fully quantified, the application of the cost causation principle should be automatic and straightforward.⁸¹

Mandating that nonrecurring costs be recovered only through recurring charges significantly changes the incentives of both CLECs and ILECs. Recurring charges that allow CLECs the luxury of a delayed payback mechanism shifts the risk of default from the CLEC who causes the costs to the ILEC that actually incurs the one-time cost. If the CLEC loses the customer before the amortization period for the nonrecurring charge is completed, the ILEC is shorted on cost recovery. In effect, the ILEC would be forced to underwrite CLEC competitive activities. Moreover, the CLEC would have absolutely no economic check from engaging in irrational and unsustainable promotional efforts to gain customers, since the ILEC would bear the cost of rapid turnover in customers. This is a clear source of inefficiency.⁸²

Some commenters suggest that ILECs mischaracterize costs as nonrecurring because the activities would supposedly benefit subsequent customers and, according to the commenters,

⁸¹ See NERA Declaration at 53-54, ¶ 104.

⁸² As NERA explained, “[t]his clear source of inefficiency would have downstream repercussions, such as requiring the ILEC to configure its network and practices differently than it would absent that inefficiency. With a distorted network configuration, the ILEC’s costs would fail to reflect efficient operations. At the same time, an inefficient degree or type of competitive entry would be encouraged. Also, with the default risk burden shifted to it, the ILEC could well become less willing to invest in systems and mechanisms for serving CLECs that cost more to install and operate initially but were likely to prove more efficient in the long run. In other words, this shift of incentives may induce a bias toward *short*-run cost-saving systems and practices (e.g., cause the ILEC to rely more on manual operations using the embedded labor force rather than on more forward-looking automated systems).” *Id.* at 54, ¶ 105.

should be recovered through recurring charges.⁸³ The definitional problem that commenter attempts to seize upon is illusory.

Nonrecurring costs reflected in BellSouth's nonrecurring cost studies only include one-time expenditures. Contrary to the implication of the comments of some, nonrecurring costs rarely include investment or capitalized costs.⁸⁴ For example, the labor associated with the physical installation of a loop (*i.e.*, the construction of the loop) is capitalized, not expensed.⁸⁵ Accordingly, such costs are not considered in the development of nonrecurring costs.

Nonrecurring costs are associated with the activities required to provision the service (not construction of the facility) pursuant to a specific service request. In other words, these are the costs that BellSouth incurs only after it receives a service request from a CLEC and reflect the activities undertaken to activate a circuit and to establish the appropriate records such that the circuit works for the CLEC.⁸⁶ None of these costs are, nor should they be, included in the development of recurring costs or charges.

Furthermore, the work activities associated with nonrecurring costs are unique to the service requested by a specific CLEC. For example, BellSouth offers different types of loops –

⁸³ See, *e.g.*, Declaration of Dr. August Ankum, attached to Comments of MCI at 56 (“Ankum Declaration”).

⁸⁴ The vast majority of these nonrecurring costs are driven by service requests and are labor-related. One exception is the “per Local Service Request” element that also considers the capital costs associated with the developmental (one-time) costs of the electronic interfaces.

⁸⁵ Capitalizing labor costs are required by Section 32.2000 of the Commission's rules which requires that all direct and indirect costs of construction be charged to telephone plant accounts and defines direct and indirect costs to include labor (*i.e.*, wages and expenses of employees directly engaged in or in direct charge of construction work). 47 C.F.R. § 32.2000.

⁸⁶ Examples of nonrecurring activities include running the jumpers at the cross-box, making the physical connection at the network interface device and testing the circuit to ensure that it meets the transmission requirements of the service that is ordered.

some that are designed, others that are not. Inherent in the designed loop work activities is coordination, which requires additional effort and thus additional cost. Some parties argue that these activities benefit future customers. For example, Murray argues that the installation of a cross-connect at the feeder-distribution interface (“FDI”) should not be subject to a nonrecurring charge if the facility remains in place.⁸⁷ Murray’s conclusion is flawed. She fails to recognize that in determining the nonrecurring cost, the study does not assume that every service request requires the installation of a cross-connect. Instead, the study, which calculates a nonrecurring cost for an average loop, reflects the probability that dispatch will be necessary.⁸⁸ Thus, if the cost of installing the cross-connect is \$10 but the probability that this activity will be necessary is only 10%, the nonrecurring cost of the activity included in the study is \$1.00, not \$10 as Murray’s analysis would imply. On the other hand, if the cost were excluded in its entirety, as Murray would seem to suggest, BellSouth would not be reimbursed for costs it incurs to install service. Finally, BellSouth’s retail tariffs also reflect a nonrecurring charge intended in part to recover costs associated with this activity – Line Connection Charge (A4 – General Subscriber Service Tariff). Thus, parity is maintained between the wholesale and retail customers.

Even more disturbing is the implication of some commenters, such as Murray, that they have discovered a new cost concept, “reusability,” that must now be introduced into the cost study process. The fact is that there is nothing new here and BellSouth has always considered reusability. Figure 1 shows an extract of a file supporting a nonrecurring cost study for a 2-wire

⁸⁷ Murray Declaration at 102, ¶ 251.

⁸⁸ Even though the exact loop that the CLEC ordered may not require dispatch in the future, the next order may reflect a loop that does require dispatch. Furthermore, BellSouth removes costs associated with service orders from the development of its factors – *i.e.*, the potential of double-counting these costs has been eliminated.

unbundled analog loop that was used in a North Carolina proceeding.⁸⁹ As these data show, BellSouth takes into account reuse.

Figure 1

Item/Description	Worktimes (Min.)							
	Source	Description	JG / WS	First Install	First Disconnect	Addtl Install	Addtl Disconnect	Reuse Of Facilities
CUSTOMER WHOLESALE INTERCONNECTION NETWORK SERVICES (CWINS)								
SL1								
Pulls order information and assigns to work groups.	SME	CONNECT & TEST	4AXX	6.48	6.54			
SL2								
Pulls order information and assigns to work groups.	SME	CONNECT & TEST	4AXX	6.48	6.54			
Creates cut sheets to verify reuse of facilities	SME	CONNECT & TEST	4AXX	26.31		12.01		10%
Verifies and ensures accuracy of service order design	SME	CONNECT & TEST	4AXX	20.59	6.87	6.21	1.32	
Ensures dispatch	SME	CONNECT & TEST	4AXX	7.72				
Performs frame continuity, date coordination and testing	SME	CONNECT & TEST	4AXX	14.41		6.61		
Performs due date coordination & testing	SME	CONNECT & TEST	4AXX	14.30		3.77		
Contacts customer and completes service order	SME	CONNECT & TEST	4AXX	15.78	4.93			
Performs Local Number Portability (LNP) work functions	SME	CONNECT & TEST	4AXX	1.00		1.00		10%
Performs disconnect on existing service	SME	CONNECT & TEST	4AXX	1.00		1.00		10%

Debates related to nonrecurring cost recovery are centered on the forward-looking costs associated with operations support systems (“OSS”). One area of contention is the degree to which forward-looking costs should reflect manual intervention in the preordering, ordering, provisioning, repair and maintenance, and billing processes. Some commenters have argued that

⁸⁹ NC UNE Proceeding, *supra* n.12.

the most efficient OSS systems would eliminate all manual intervention.⁹⁰ Such an idealized view would require a level of integration such that each vendor's equipment could communicate with every other vendor's equipment, and procedures would not require human intervention. Putting aside that these prerequisites are not fully developed, the capital expenditures to implement such an integrated system would make such an approach cost-prohibitive.⁹¹ More importantly, manual intervention will always be required on some orders either because of their complex nature or because of input error.

To suggest that nonrecurring costs should be constrained by hypothetical assumptions regardless of the likelihood that such assumptions will see fruition is reckless. Indeed, none of BellSouth's state commissions have ever embraced such outrageous hypothetical views of OSS system costs. While adopting forward-looking studies, state commissions have tempered such studies by considerations of what can reasonably be achieved.⁹²

AT&T, through the Murray Declaration, argues that the Commission would create incentives for the ILEC to improve efficiency if it established a presumption that manual coordination costs should be excluded from forward-looking costs. According to Murray, ILECs

⁹⁰ See, e.g., Murray Declaration at 80-81 ¶ 197.

⁹¹ In CC Docket No. 01-338, AT&T shopped an argument that loop provisioning should be based on a "flip-the-switch" process that could be used in lieu of the current hot-cut process. BellSouth responded to AT&T's proposed electronic loop provisioning process ("ELP") whose goal was to transfer loops via a software command. As BellSouth showed, to implement such an approach, however, all loops would have to be modified to the ELP architecture at an initial cost of an estimated \$8 billion. Furthermore, \$ 1.6 billion in analog line equipment would be stranded. The economic feasibility of an ELP process could not be justified. Indeed, loop rates would have to be increased by approximately \$7 per loop to recover the outlay for ELP. See Letter from W. W. Jordan, Vice-President, Federal Regulatory, BellSouth, to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, CC Docket No. 01-338 (filed Sept. 27, 2002).

⁹² See, e.g., *Investigation into Pricing of Unbundled Network Elements*, Docket No. 990649-TP, *Final Order on Rates for Unbundled Network Elements* at 332 (Fla. Pub. Svc. Comm'n May 25, 2001).

should not be compensated for the manual processing that occurs because it did not design OSS systems to operate without manual intervention.⁹³ Such arguments make no sense. They assume unrealistic OSS systems that cannot be achieved and overlook the substantial incentives that ILECs such as BellSouth already have to ensure that the OSS systems operate smoothly and efficiently.⁹⁴ Moreover, these arguments overlook the substantial expenditures BellSouth has already made for OSS improvements and which the Commission has found to be in compliance with its rules.⁹⁵

Nor should the Commission succumb to the pie-in-the-sky prognostications of some that higher flow through rates by ILECs' OSS systems can be obtained.⁹⁶ Such futurist predictions are ungrounded in reality. They do not take into account or for that matter even acknowledge, the efforts BellSouth has made to improve flow-through performance. BellSouth has

⁹³ See Murray Declaration at 77, 84-85, ¶¶ 191, 206. See also Ankum Declaration at 45. Murray is of the view that coordination is one of the basic capabilities supplied by modern OSS. Murray Declaration at 77, ¶ 191. BellSouth offers the CLECs a choice of non-designed and designed loops. Non-designed loops do not include order coordination, however, CLECs can order optional manual order coordination elements at an additional charge, if they so desire. (Manual order coordination captures the costs incurred when the work activities of several departments are synchronized.) If the CLEC chooses not to order coordination, it is not billed for coordination. For designed UNEs, coordination is included in the cost and the CLEC is aware of this fact. BellSouth believes that order coordination is necessary for designed loops due to the more complex nature of designed services.

⁹⁴ For example, state commission supervised performance measures impose financial penalties on BellSouth for poor flow through performance. Murray's view that all provisioning would be on an automated basis would require every loop to be a complete circuit, that the right card (voice, ISDN, HDSL, etc.) is in the right location for the type loop ordered, that each vendor's equipment communicates with other vendor-supplied equipment, that terminations would not have to be made or broken – *i.e.*, a perfect world. This flip-the-switch network that Murray advocates will never occur, especially for UNEs which are only pieces of the network, not complete circuits.

⁹⁵ See *BellSouth Multistate Order*, 17 FCC Rcd at 17704-05, ¶ 194; *In the Matter of Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Authorization To Provide In-Region, InterLATA Services in Florida and Tennessee*, WC Docket No. 02-307, *Memorandum Opinion and Order*, 17 FCC Rcd 25828, 25884, ¶ 116 & n.384 (2002) ("*BellSouth FL/TN Order*").

⁹⁶ See, *e.g.*, Ankum Declaration at 45.

mechanized and improved the types of ordering processes for elements, that account for the most CLEC volume. BellSouth is now focused on improving processes for low volume types as well as making process improvements for extremely complex orders. In other words, OSS development is not static. It is in a constant state of improvement and, indeed, flow-through rates are improving month over month in large part due to the continuous efforts of BellSouth.

Rather than acknowledge the improvement, CLECs instead proffer that the Commission should adopt a 2% fallout rate.⁹⁷ This artificially low rate suggested by the commenters does not consider the problems with mechanizing certain types of service requests because of their complexity (*e.g.*, number of lines on an account, specialized directory listings) or the need to handle certain types of requests manually (*e.g.*, based on contractual obligations). Nor does this low rate take into account CLEC input errors.⁹⁸ State commissions and this Commission, in granting BellSouth Section 271 relief, have scrutinized BellSouth's OSS systems and they have been found to meet all the requirements that the Communications Act imposes. In the face of this scrutiny and BellSouth's demonstrations that it continues to make improvements in its systems, it is impossible to conclude that its OSS systems are unreasonable or inefficient.

BellSouth's OSS costs are reflected in cost studies in two ways. Costs associated with the existing legacy systems are captured in the shared and common cost factors. Costs associated with the OSS Electronic Interfaces are recovered on a "per local service order" basis.

⁹⁷ Ankum Declaration at 49. *See also* Murray Declaration at 82, ¶ 201. Murray contends that the 2% rate is achievable citing the Testimony of Richard Walsh as support. It is revealing that the only "support" Mr. Walsh provides is to claim that some unnamed "authors of the NRCM decided the appropriate fallout rate attributable to the CLEC should be conservatively set at two percent (2%)." Direct Testimony of Richard J. Walsh, submitted with AT&T Comments, at 20, lines 11-13 ("Walsh Testimony").

⁹⁸ BellSouth is experiencing fallout rates on non-complex CLEC orders in the range of 3%-6% that are directly attributable to CLEC input errors.

OSS Electronic Interfaces are the systems BellSouth developed specifically to provide CLECs with the ability to transmit a Local Service Request (“LSR”) electronically and utilize BellSouth’s downstream legacy systems. In developing these costs, all the interfaces impacting CLECs were considered as a total system. By doing so, the cost study reflects the efficiencies resulting from designing a complete solution instead of building it piecemeal. For example, it is more efficient to consider the interface interdependencies with downstream systems up-front and then build the interfaces within those constraints instead of programming each system independently.

These interfaces allow the CLEC to electronically access BellSouth’s existing order processing systems. Both resale and UNE orders can be transmitted via these interfaces. If the CLECs did not wish to submit orders, BellSouth would not have incurred these costs. Thus, these costs are directly caused by the competitors and should legitimately be recovered by the incumbent. The arguments that incumbents “benefit” from the construction of these electronic interfaces and that these costs are “transition costs” are absurd. Indeed, using such arguments would potentially classify any cost that incumbents incur in the provisioning of UNEs as “transition costs” and one could claim that they “benefit” competition. Furthermore, attempts to delay the incumbent’s recovery of these costs by suggesting a “local number portability” mechanism is just that, a delaying tactic.⁹⁹

Moreover, when faced with identical arguments regarding the recovery of OSS costs, all of BellSouth’s state commissions dismissed them and have allowed a charge for the costs associated with the development of the electronic interfaces. Most recently, the North Carolina

⁹⁹ See Murray Declaration at 96, ¶ 237.

Utilities Commission found: “BellSouth’s assertion that OSS costs [for electronic interfaces] are not included in the shared and common costs should be accepted. Therefore it is appropriate to adopt UNE rates that allow BellSouth to recover its OSS costs.”¹⁰⁰ The Commission, in this proceeding, should act accordingly.

Another issue swirling about the nonrecurring cost pot is the recovery of loop conditioning costs. As BellSouth made clear in its comments, while the forward-looking cost of a loop excludes the cost of load coils in the recurring cost, such exclusion says nothing about the recovery of the cost of removing load coils and excessive bridge taps from existing loops. A CLEC, in making the request, is causing the cost to be incurred. Unless the CLEC is assessed a nonrecurring charge, the costs that it causes BellSouth to incur will not be recovered.

Additionally, if there is no financial incentive to judiciously request conditioning, CLECs will not be deterred from making unnecessary requests, which may ultimately damage the voice grade network. This is not idle speculation. In Georgia, the state commission improperly, in BellSouth’s view, set the rate for loop conditioning to zero. BellSouth received a request from a CLEC for an unbundled conditioned loop. BellSouth advised the CLEC that the loop requested was 37,000 feet in length. The cost to condition this loop was \$15,000 but the CLEC was not responsible for any of the amount. After the conditioning was complete, the CLEC refused the unbundled loop because it was over 25,000 feet (a fact the CLEC knew at the outset). Thus, BellSouth was forced to incur a cost needlessly, in large part, because there was no economic reason for the CLEC not to place its order. By setting the loop-conditioning rate to zero, the

¹⁰⁰ *NC UNE Proceeding, Order Adopting Permanent Unbundled Network Element Rates for BellSouth Telecommunications, Inc.* at 106 (Dec. 30, 2003).

Georgia Commission effectively had BellSouth subsidize CLEC operations and enabled CLECs to operate inefficiently without consequence.¹⁰¹

The only arguments that competitors offer in opposition to a nonrecurring charge for loop conditioning are variations on the theme that forward-looking recurring costs do not include excessive bridge taps or load coils.¹⁰² These arguments miss the point. The issue is not the recurring cost of an unbundled loop, because the recurring cost of an unbundled loop does not include the costs of bridged tap or load coils. The issue is that some existing loops have load coils and the ILEC incurs real costs to remove this equipment from an existing loop, when requested to do so by a CLEC. It is appropriate that the CLEC that causes the cost to be incurred compensate the ILEC for these costs.

Another criticism of the incumbent's nonrecurring costs relates to the data that are used to calculate such costs. It is not uncommon in state proceedings for the same parties complaining here to protest the use of work times derived from subject matter experts (*i.e.*, the people that actually perform the work).¹⁰³ The fact is that BellSouth's inputs are based upon experts familiar with the provisioning guidelines and contractual obligations under which they must operate. Furthermore, the inputs used in the studies reflect anticipated, but attainable, future improvements to the provisioning process. Finally, contrary to the assertion of Murray and Cratty, the labor rates that are applied against the work times should reflect wages paid by the incumbents. Claims that "labor rate loadings in a competitive market may be lower than

¹⁰¹ It is important to note that the conditioned loop can no longer be used by BellSouth to provide analog voice service, because such service provided over a 37,000 foot loop requires the equipment that BellSouth was forced to remove as a result of the CLEC's request.

¹⁰² See, e.g., Riolo Declaration at 80-81, ¶ 153; Murray Declaration at 118-19, ¶ 294.

¹⁰³ See Murray Declaration at 68-69, ¶171.

those of a monopoly” and that “loadings representative of a competitive market might be appropriate” would obviously not allow the incumbents to recover the nonrecurring costs associated with labor performed by their employees.¹⁰⁴ These commenters would just imagine collective bargaining agreements away. Calculating nonrecurring costs is not a fictional exercise and recognition of the labor costs reflected in collective bargaining agreements is appropriate.

Equally without merit are suggestions that work times be estimated from demonstrations.¹⁰⁵ Such exercises are pointless. First, they are a one-time presentation and thus, do not represent an average which a cost study should reflect. Next, the demonstrations are skewed in that they occur in a controlled environment without the impact of real-world considerations such as congested manholes, weather conditions, traffic, etc. Indeed, demonstrations before the state commissions may only provide insight into one aspect of the task. For example, Murray claims she “was able to remove load coils in a fraction of the time I have seen reported in ILEC ‘real-world’ studies.”¹⁰⁶ Murray fails to comprehend that those “real-world” inputs reflect reviewing the order, identifying where the load coils are located – which poles, manholes, or buried locations are involved, traveling to the location, establishing safety devices (set-up) at the sight, locating the correct splice case, pumping manholes, identifying the correct cable in often congested manholes, toning pulp cables, removing the load coil, re-splicing the cable, testing the cable, clean-up, and updating loop make-up information to reflect the load coil removal – all tasks she did not undertake and that would not be considered in a demonstration that focused solely on actually unloading a cable pair.

¹⁰⁴ Declaration of Terry L. Murray and D. Scott Cratty, submitted with Initial Comments of Broadview Networks, Inc., *et al.* (“CLEC TELRIC Coalition”) at 27, n.36.

¹⁰⁵ See Murray Declaration at 70, ¶ 174-175.

¹⁰⁶ *Id.* ¶ 174.

Throughout these Reply Comments, BellSouth has urged that the Commission follow cost causation as a guiding principle in its promulgation of TELRIC rules. As discussed above, cost causation is no less appropriate with respect to the recovery of nonrecurring costs than it is to the recovery of recurring costs.

Nonrecurring charges should reflect the costs caused by the CLEC's request for service and the reimbursement of these costs should be made immediately after the work is completed. Murray ignores the immediate nature of the incumbent's expenditures when she expresses her concern that a "serious overstatement of forward-looking costs" will result if "the nonrecurring cost savings associated with new investment" is not considered.¹⁰⁷ In other words, Murray wants nonrecurring rates based upon a fictional, non-achievable future network that has been cleansed of human intervention and with little or no cost to the CLECs. While BellSouth supports the use of forward-looking inputs into the nonrecurring studies, these inputs and probabilities should reflect the realities of the existing network. Indeed, to mandate anything else such as idealized visions of network management systems that do not and will not exist in any foreseeable future amounts to nothing less than an implicit subsidization program for the CLECs. Under Murray's approach, the incumbents incur all of the real-world provisioning costs and the CLECs receive all the benefits – the unbundled element requested and an artificially low rate.

The competitors' arguments must be subject to a "reality check" by the Commission. The telecommunications network involves labor intensive provisioning, *i.e.*, physical work must be done and this fact will not change appreciably. Thus, visions of totally mechanized processes must be viewed with skepticism.

¹⁰⁷ *Id.* at 53, ¶ 135.

It is apparent that no party disagrees with the contention that disconnect charges should apply at the time of disconnect. Indeed, BellSouth supports such a rate structure. In order to avoid any confusion with respect to the level of disconnect costs, however, one must distinguish between disconnecting unbundled elements and disconnecting combinations of UNEs. (Some elements have no disconnect charges, others have relatively small charges, and other charges are more substantial.) The work effort to disconnect an unbundled element is very different from disconnecting a combination of UNEs. An unbundled element is not a working circuit; it is only a piece of the network. Thus, an unbundled loop, for example, can never be placed in a “soft dial” tone state because it is not connected to BellSouth’s switch. The costs BellSouth calculates for UNE disconnect reflect the physical activities that must be undertaken to disconnect each specific type of UNE. On the other hand, for loop/port combinations (“UNE-P”) on a switch-as-is basis, the disconnect costs have been paid by the end-user when they initially purchased service. Thus, no additional disconnect costs are appropriate and the CLEC is not charged. BellSouth has instructed its employees that disconnect charges associated with UNE-P combinations apply only when appropriate. For example, if the loop/port combination is a “new” combination (*i.e.*, it is not a “switch-as-is” of an existing retail service to UNE-P), then disconnect charges would apply since there is no retail end-user that has previously paid BellSouth upfront for a future disconnection. Below is a list of situations explaining how and when BellSouth applies disconnect charges to UNE-P combinations.

1. New UNE-P line installed by CLEC A and Disconnected by CLEC A - CLEC A pays disconnect charge.
2. New UNE-P line installed for CLEC A then converts to CLEC B, then disconnected by CLEC B - CLEC A does not pay when the line is converted to CLEC B, however CLEC B will pay the disconnect charge when the line disconnects.

3. New UNE-P line installed for CLEC A, and end user transfers service to another location under CLEC A - Disconnect charges apply to CLEC A.
4. New UNE-P line installed for CLEC A, end user moves service to CLEC C using UNE Loop - Disconnect charges apply to CLEC A.
5. New UNE-P line installed for CLEC A, end user moves service to CLEC B using UNE-P, the end user moves to CLEC C using UNE L - disconnect charges apply to CLEC B.
6. New UNE-P line installed for CLEC A, end user moves to BellSouth Retail- CLEC A does not pay the disconnect charge because retail will pick it up in the installation charge of the BST End User.
7. Line installed by BST retail and disconnected, New UNE-P line installed by CLEC A and disconnects with CLEC A - Disconnect charges apply because it was a new UNE-P.
8. Line installed by BST retail and converted to CLEC A using UNE-P and CLEC A disconnects line - Disconnect charge does not apply because it was recovered by BST end user in the installation charge.
9. Line installed by BST retail and converted to CLEC A using UNE-P, end user converts to CLEC B and disconnects from CLEC B - Disconnect charges do not apply because it was recovered by BST End User in the installation charge.
10. Line installed by BST retail and converted to CLEC A using UNE-P, end user converts to CLEC C - Disconnect does not apply as it was recovered by BST end user in the installation charge.

For loop/transport combinations there are no retail counterparts and, thus, the disconnect costs have not previously been recovered from a retail customer. When a disconnect is requested for these combinations, BellSouth must perform physical activities in order to disconnect the circuit and thus, disconnect charges should apply.

With respect to disconnect charges, the CLEC should expect to pay for nonrecurring activities only when they occur, *i.e.*, at the time of disconnect. Similarly, incumbents expect to be reimbursed for nonrecurring provisioning activities when the CLEC accepts the element, *i.e.*, when provisioning activity is complete. Accordingly, any attempt to convert nonrecurring costs to recurring rates should not be adopted. Indeed, to do so would impose on BellSouth all of the risk for recovering its nonrecurring cost, for only if the CLEC continues to purchase the element

over the entire recovery period would BellSouth ever be compensated for its nonrecurring costs. Additionally, identification of the “recovery period” is problematic. In a competitive environment, a provider’s ability to predict how long a customer will remain on the provider’s network is limited. Finally, from a cost methodology perspective, costs should be stated as they naturally occur, *i.e.*, if the costs are one-time expenses it is appropriate to express them as nonrecurring. If it is an on-going cost, then the appropriate way to express the cost is as a recurring cost. There is no rational reason to depart from such a methodological approach.

I. Rate Structure (§§131-32)

With regard to switching, two issues have emerged from the comments. The first concerns the calculation and application of switch discounts. Second is the rate structure for switching. Each is discussed below.

1. Switch Discounts

The Commission has, on several occasions, found it appropriate to reflect both a “new” discount and a “growth” discount for switches. BellSouth believes that there is no reason for the Commission to abandon such an approach. In fact, it appears no party opposes the inclusion of both levels of discount in the calculation of switch-related costs. Instead, the issues with respect to switch discounts are how to appropriately determine the value of these “new” and “growth” discounts and how to apply them in the cost studies.

Some parties contend that a “life cycle” analysis be conducted to determine the relative weighting of the new and growth discounts. AT&T made the identical proposal in connection with BellSouth’s five-state 271 application.¹⁰⁸ The “backward-looking” nature of such an approach represents a serious flaw. Implicit in the life-cycle calculation is that, in the long-run, the incumbents continue to purchase a substantial amount of their switches at the current new discount rate—for the next 15 years according to AT&T. Actual data do not support such an assumption. Indeed, analog switches constitute less than 3% of the switch types in BellSouth’s territory. Accordingly, the opportunity to replace analog switches and invoke this discount rate

¹⁰⁸ It is interesting to note the difference between the calculations. In the 271 proceeding, AT&T (Ms. Pitts) calculated an 82% new/12% growth distribution (Exhibit CEP-1). In its comments, AT&T now develops a 92% new/8% growth distribution. Joint Declaration of Terry L. Murray and Catherine E. Pitts, submitted with AT&T Comments, Exhibit 1 (“Murray/Pitts Declaration”). BellSouth understands that the exhibits are intended to illustrate the methodology; however, the difference in the results emphasizes the potential for data manipulation.

is extremely limited. Finally, the switch contracts expire in the near term. The Nortel contract expires at the end of 2004 and the Lucent contract at the end of 2006. With the general state of the economy, the telecommunications sector in particular, and in consideration of the limited opportunity to replace existing switches, one cannot reasonably assume that the switch vendors will continue providing equipment at the current rates.¹⁰⁹ Furthermore, the proposed calculation skews the result toward the higher new discount level by assuming the entire universe of switch entities (and lines) were initially placed under a new or replacement job.

As NERA explains, it is not appropriate to assume that the forward-looking network would consist primarily of new switches with a small percentage of growth lines added on in the future. This type of analysis ignores the prospect that, besides growth lines, carriers are likely to constantly upgrade and modify various modules of their switches. Therefore, the discount mix is likely to be different from the hypothetical mix assumed by the opposing parties.¹¹⁰

BellSouth does not believe that it is appropriate for this Commission to prescribe the exact method of switch discount calculations such as a “life-cycle” analysis. It is sufficient to conclude that consideration of the impact of the actual switch contracts’ structure – new and growth discounts – is correct. State Commissions should decide the best approach to determining switch discounts.

¹⁰⁹ Parties contend that the switch vendors do not undercut the initial price to gain future purchases. BellSouth does not agree. The *U.S. Central Office Equipment Market: 1995 Edition* states that the strategy of vendors is to “Cut price on sales of initials (new switches) to grow installed base and guarantee high-margin sales of add-on hardware and software.” Northern Business Information, *U.S. Central Office Equipment Market: 1995 Edition* at 71 (McGraw-Hill Companies, Inc. 1996). It is improbable that due to the limited opportunity to replace analog offices or to place new switches, the vendors will maintain the current price structure.

¹¹⁰ NERA Reply Declaration at 35, ¶ 69.

The Commission's determination here can temper the issue with common sense. For example, AT&T's calculation that 92% of the switch investment should be weighted toward the "new" discount cannot be reconciled with the facts that purchases under the "new" discount rate are extremely limited and there is no assurance that these rates will even be available in the future. Indeed, the effective discount is even higher because AT&T also proposes that the getting started investments receive the pure "new" discount. The Commission should not permit these unsupportable assumptions to creep into forward-looking cost methodology.

2. Switch Rate Structure

Some commenters argue that switching should be provided on a flat, per port rate structure.¹¹¹ These arguments are without merit. The commenters incorrectly contend that ILECs' vendor contracts for switching are set on a fixed dollar per line and that usage has no relevance. Usage is very relevant to the establishment of contract prices. While there is no separately stated "usage" price in the contracts, the calculation used to determine the number of equivalent lines varies based on type of termination and on the anticipated usage. For example, some equipment contracts have a line multiplier such that as usage increases, the line multiplier increases. Thus, even though the vendor price may be stated in terms of lines, the number of lines to which the price is applied is determined subsequent to the application of the line multiplier.

It is naïve to characterize vendor switch prices as excluding usage. Although prices may be expressed in terms of dollars per line, the underlying calculations that are performed to determine the equivalent line price requires consideration of anticipated usage.

¹¹¹ See e.g., AT&T Comments at 11; MCI Comments at 29.

The fact of the matter is that the majority of the costs of a switch is usage-based and is engineered on a usage-sensitive basis. The line and trunk modules comprise approximately 56% of the investment of a typical switch. Lines reflect line concentration ratios and trunks are engineered based on anticipated traffic loads. Thus, these modules are certainly usage sensitive. The switching matrix represents approximately 9% of the investment of a typical switch, which as AT&T's experts Murray and Pitts acknowledge "could be usage sensitive to the extent that increases in the number of minutes that a switch is used requires the incumbent to increase the capacity of the electronics in the switch."¹¹² The common control portion of a switch typically comprises approximately 20% of the total investment. The processing capacity of the common control is limited. Even with advances in technology, it is nonsensical to claim that processors have inexhaustible capacity. During the life cycle of a digital electronic switch, the central processor will be expanded or replaced with a processor with greater capacity to accommodate additional traffic load or enhanced features. In fact, over the past years, switch vendors have increased the processor's capacity such that the switch can process calls more quickly and thus, increase its overall efficiency and capacity.¹¹³ Overall, at least two-thirds of the investment of a typical switch is usage-sensitive.

The argument that the switching costs are not traffic sensitive and, thus, the rate structure should be flat-rated is not new. BellSouth has encountered it before, most recently in connection with its applications for long distance relief. In evidence submitted in connection with its applications, BellSouth showed that vendor specifications proved that the majority of switch

¹¹² Murray/Pitts Declaration at 24, ¶ 45.

¹¹³ Nortel's DMS processor has been progressively upgraded from the NTX40 to the SN20, SN30, SN40, SN50, SN60, SN70; with each upgrade increasing call handling capability. Additionally, Lucent's Communications Module is in the processes of being upgraded from CM2 to CM3.

investment cannot be classified as nontraffic sensitive.¹¹⁴ The table below summarizes relative traffic sensitive and nontraffic sensitive switch-related investment.

**BELLSOUTH SWITCH-RELATED INVESTMENTS
TRAFFIC SENSITIVE vs. NON-TRAFFIC SENSITIVE**

	TRAFFIC SENSITIVE	NON-TRAFFIC SENSITIVE
ALABAMA	68%	32%
GEORGIA	66%	34%
KENTUCKY	70%	30%
LOUISIANA	68%	32%
MISSISSIPPI	71%	29%
N. CAROLINA	72%	28%
S. CAROLINA	72%	28%

Only the line termination ports would be considered non-traffic sensitive. The quantity of line terminations corresponds to the quantity of customer lines that are to be served by the switch. However, the links from line terminations to the switch matrix, the switch matrix itself and most other components of the switch are traffic sensitive. Even though a given trunk termination is not traffic-sensitive in that there is no concentration between a trunk port and the switch matrix, the total quantity of trunk terminations is based on the amount of inter-switch traffic.

In an attempt to bolster their faulty rate structure arguments, some commenters select certain traffic engineering concepts to demonstrate that switching costs should not be recovered on a usage basis. For example, commenters point to the fact that switch equipment is engineered on peak period demand.¹¹⁵ What the commenters simply ignore is that while sufficient capacity

¹¹⁴ See Reply Affidavit of Daonne Caldwell, WC Docket No. 02-150, ¶¶ 83-99.

¹¹⁵ See, e.g., AT&T Comments at 11; MCI Comments at 30.

must be available to meet peak demand, the equipment and the associated costs do not disappear during non-peak periods, nor can the equipment be used for other purposes. During peak periods, the cumulative traffic load determines how much equipment must be installed in order to avoid blockage of calls. Lines that represent greater-than-average usage are responsible for a greater portion of the equipment that is needed to avoid blocked calls. A line that generates twice the traffic in comparison to another line consumes twice as much capacity. The cost causative rate structure in these circumstances is a usage-based rate structure.

Some commenters suggest that an incumbent's flat-rated retail local service pricing indicates that a flat-rate rate structure for switching is appropriate. Not considered by these commenters is the fact that local service pricing reflects the public policy considerations and determinations of state commissions. In other words, these pricing decisions for policy reasons reflect departures from cost causative principles, not implementation of such principles. No public policy reason exists that would support a similar departure in the case of switching UNEs. In any event, BellSouth's retail rate structure is not the issue. CLECs are free to recover usage costs from their end users however they choose – either on a flat-rated basis or on a usage-sensitive basis or some other basis. The issue is the incumbent's right to appropriate cost recovery from the CLEC that purchases unbundled switching or UPE-P from the incumbent.

No more compelling are the commenters' assertions that flat-rate pricing for switching would not impact call blocking or necessitate significant capacity additions. The basis for this argument is once again an inappropriate analogy with retail local service. With respect to local service and network capacity and blockage, equipment decisions of local exchange carriers have been based on years of traffic analysis. In performing this analysis, ILECs have had to overcome the challenges presented by public policy pricing decisions that have deviated from cost

causative principles. To extend the same form of non-cost causative pricing to UNEs could present insurmountable challenges. For example, there would be no economic discipline to the CLECs' consumption of the switching resource which could result in increased switch usage that could cause blocking because of an unanticipated load¹¹⁶ – a traffic load not considered when the switch was purchased or when the switch costs were developed. In these circumstances, BellSouth is exposed to an unreasonable risk that it will not recover its costs.

Another erroneous characterization regarding switch costs is the assertion that switches are not purchased and expanded on a component-by-component basis. Purchasing a switch is more complicated than just stating that you want to purchase a 50,000-line switch. There are multiple variables that must be considered in conjunction with overall network needs. For example, there are multiple ways of interfacing a customer loop and two ways of interfacing trunks on a 5ESS switch. To obtain the interfaces that are required they must be purchased on an a la carte basis. BellSouth cannot just purchase a prepackaged configuration and hope that it works out.

¹¹⁶ There have been significant exceptions to the normal traffic patterns usually observed on the local networks that have had an operational impact. At the time when a significant number of customers began to use telephone voice lines for narrowband data access, local service providers experienced severe call blockage at various points in their networks. This impact was due to the long holding times that narrowband data lines often present. Additional equipment had to be installed, and special arrangements made to place heavy-usage data lines on facilities that could accommodate the increased usage. It is clear that the network, including switch facilities, is usage sensitive.

**J. Interconnection Pricing, Collocation and Reciprocal Compensation
(¶¶ 147-48)**

In its comments, BellSouth explained that the Commission should use this proceeding to clarify the application of TELRIC to interconnection facilities. TELRIC should only apply to facilities that are used to exchange interconnection traffic pursuant to section 251(b)(5) of the Act, *i.e.*, local traffic. TELRIC should not apply, and the Commission should clearly so state, to interexchange traffic that might also traverse the same physical facility as 251(b)(5) traffic. BellSouth is not asking that competitive carriers establish separate physical connections for 251(b)(5) traffic and interexchange traffic. Such carriers should be able to benefit from the efficiency of using the same physical facility to transmit the full spectrum of traffic (*e.g.*, local, toll and access). However, as the Commission noted in the *Intercarrier Compensation NPRM*, “[e]xisting intercarrier compensation rules may be categorized as follows: access charge rules . . . and reciprocal compensation rules.”¹¹⁷ Thus, different pricing rules apply to the different forms of traffic. While the Commission is considering a uniform compensation plan in the *Intercarrier Compensation* proceeding, until such a plan is adopted it must make clear that while carriers may transmit multiple types of traffic over a single interconnection facility, the usage of that facility must be allocated so that only the percentage of the facility used for section 251(b)(5) traffic would be billed at TELRIC rates, with the remainder of the facility being billed at the appropriate access rates. As BellSouth pointed out, the clarification it sought would not burden any carrier and would put an end to the vacuous disputes that have arisen from time to time regarding the pricing of interconnection facilities.¹¹⁸

¹¹⁷ *In the Matter of Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Notice of Proposed Rulemaking*, 16 FCC Rcd 9610, 9613, ¶ 6 (2001).

¹¹⁸ See BellSouth Comments at 54-55.

The comments of some parties confirm the need for the Commission to issue the clarification that BellSouth has requested. For example, AT&T attempts to use this proceeding to sweep into its scope access charge pricing. This proceeding is not the place for the Commission to make broad pronouncements regarding a unified policy of intercarrier compensation. As BellSouth pointed out in its comments, the Commission already is considering a unified compensation mechanism in its *Intercarrier Compensation* proceeding and it is in that proceeding, based upon a full and complete record, that it should make its policy determinations.

Cox suggests that the Commission should establish different pricing methodologies for interconnection and reciprocal compensation. Reciprocal compensation is not at issue here. Cox's proposal should be made in the *Intercarrier Compensation* proceeding. This proceeding should not become a catchall for issues. There are important matters to be resolved regarding the reformation and application of TELRIC that do not need to be burdened by the excess baggage of unrelated issues.

In the *Notice*, the Commission requested comments on the pricing of power associated with collocation. Some commenters suggest that power prices should reflect the amount of power consumed.¹¹⁹ The term consumed is ambiguous. To be clear, CLECs should pay for the costs of power that they cause. Accordingly, a CLEC should pay for the amount of DC power plant infrastructure reserved or dedicated for its use. In other words, if a CLEC requests 50 amps of power, BST must reserve that much capacity in its power plant. At that point, the CLEC has consumed and is using 50 amps of power plant capacity. The fact that a CLEC may only need

¹¹⁹ See e.g., Klick Declaration at 36-38, ¶¶ 70-73; Covad Comments at 20-22.

20 amps of the requested amount does not impact the fact that BST has reserved 50 amps for the CLECs use at the CLEC's request. In other words, the amount of power a CLEC has consumed is the amount of power on a fused-amp basis that they have requested.

III. CONCLUSION

The Commission has before it the opportunity to craft UNE pricing rules that accomplish its goals of encouraging rational investment decisions by both CLECs and ILECs, promoting additional investment in network facilities and new products and services, and enabling ILECs to recover their investment associated with UNEs. While some commenters preach the efficacy of the *status quo*, BellSouth has shown that these commenters' positions are based on fundamentally unsound premises. It is time for the Commission to reform TELRIC. Specifically, the Commission should: (1) replace the current methodology based on the hypothetical network assumption with forward-looking methodology based on real-world ILEC network attributes, including actual ILEC placement costs; (2) issue methodological guidelines that state commissions must follow, including fill factors based on recent ILEC utilization rates, asset lives for depreciation that are equal to those used for financial reporting, and structure sharing percentages that reflect what the ILEC actually experiences; (3) declare that the cost of capital for UNEs should be forward-looking and based on market values, utilizing the S&P 500 as the proxy for such; (4) find that nonrecurring costs should be recovered as a one-time charge assessed at the time the cost is incurred and that they should reflect all costs incurred by the ILEC to provide a UNE; (5) make clear that, on facilities used to exchange multiple types of traffic, TELRIC pricing rules apply only to that portion of the facility used to carry local interconnection traffic; and (6) find that resale discounts should be based on the costs that the ILEC will actually avoid.

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CERTIFICATE OF SERVICE

I do hereby certify that I have this 30th day of January 2004 served the following parties to this action with a copy of the foregoing **REPLY COMMENTS** by electronic filing and/or by placing a copy of the same in the United States Mail, addressed to the parties listed on the attached service list.

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